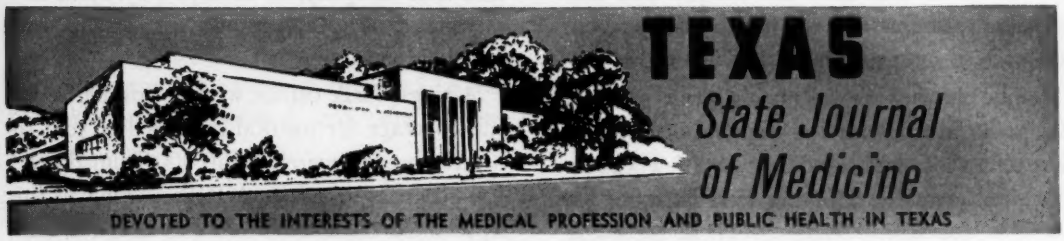

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Questions Needing Answers

There is a problem confronting doctors and medicine in general with which each one of us must become acquainted —and must help with the solution—because in one way or another each of us is implicated. The future of medicine, as we know it, will depend on how active a part we take in the solution.

This problem is voluntary health insurance.

There are three questions that are basic: (1) Are we willing to accept the proposition that voluntary health insurance is *the* mechanism for solving the financial problems of medical care? (2) Are we willing to accept the leadership in solving the financial and socio-economic problems of medicine? (3) If not, are we willing to accept the leadership of a third party, a nonmedical group?

What is it that is happening in the health insurance field which disturbs us so much? First, there is the abuse of health insurance by doctors, patients, and hospitals. Many people have lost sight of the primary purpose of health insurance, which is to protect against large economic losses—not to take care of minor day-to-day medical costs.

Some patients are abusing health insurance by over-utilization—wanting to stay longer in hospitals because their insurance will pay for it. A patient will pressure a doctor into admitting him for a problem which could be handled as well with him as an out-patient or office patient.

Just because life insurance is paid up, a person does not commit suicide. Nor does he set fire to his house just because his fire insurance is paid up. But, when insurance on his health is paid up, it seems to be the rallying cry, "Let's use it to the hilt!" Patients must be educated on the fallacies

of abuses of this kind and on the fact that eventually abuses will put health insurance out of reach of most people.

Some doctors are aggravating this problem by going along with the requests of patients, not only those just listed, but, in a few known instances, actually falsifying records to get patients under policy deadlines. There are many areas in which doctors compound these abuses —a few intentionally, but the vast majority unintentionally—by using such tactics as "dragnet diagnosis" and "shotgun treatment." It is certainly the prerogative of each physician in charge of a case to do that which, in his opinion, is best for his patient, and the preceding and following statements are made only as a caution to all physicians, whether a patient has health insurance or not. A doctor may be lax on continuation order of expensive drugs or indiscriminately use expensive antibiotics prophylactically prior to all surgery or every time a patient has a minimal fever. Even nurses compound this by calling the doctor's attention to patients with "a temperature of 100.6 and she is not on any antibiotics."

More serious, and less frequent, is the deliberate effort to get everything possible out of insurance. One specific instance has been cited by a Texas writer of hospital and medical service plans. A doctor sent a bill for three cystoscopies he had never done. When faced by the patient, his answer was, "Your insurance pays for three cystoscopies but not for other office procedures, so I just put in for these to get your entire bill paid." A few doctors may have higher fees for patients with insurance: "If you have insurance, your bill will be $250; if not, it will be $125." This is defeating the purpose of voluntary health insurance.

Not all hospitals are above reproach. Some hospitals have been known to accept a patient's policy payment as full payment for hospitalization, then pad the bill outrageously. After the patient is in the hospital 4 days, they bill the insurance company for 12 days' stay. Some hospitals also have higher rates for patients with health insurance.

A single large carrier writing hospitalization and coverage for medical services last year recovered approximately $140,000 from doctors and hospitals in Texas. A large portion of this represented fraudulent fees and hospital bills.

Let us think carefully about these questions:

1. What can be done about unnecessary medical costs on insured patients in particular and all patients in general?

2. How should we discipline flagrant abuses of health insurance?

3. What else, if anything, can we do about the high cost of medical care?

Active answers now can change the course of medicine.

—R. L. DETER, M.D., El Paso.

Importance of Early Detection Of Pulmonary Tuberculosis

Despite published statistics regarding the decrease in morbidity and mortality in tuberculosis in certain areas of the United States, tuberculosis in Texas continues to be one of its greatest medical and socio-economic problems. It was reported in 1957 that in Texas there were an estimated 22,000 persons with active tuberculosis.

Although a significant number of patients have been found by the x-ray mass surveys, the majority of patients in the state tuberculosis hospitals are referred by their personal physicians, who were consulted because of clinical respiratory symptoms. Unfortunately, many times patients do not seek medical care until these symptoms have persisted for weeks and sometimes for months, and by the time they are diagnosed their disease has passed the minimal stage and become moderately advanced or even far advanced, at which stage neither drugs

nor surgery is effective. At present, the average daily census at the Harlingen State Tuberculosis Hospital is 525 patients of whom 65.1 per cent have far advanced disease, 27.6 per cent moderately advanced, and only 7.3 per cent minimal.

Besides the progression of the disease there are several important factors that may develop when a case is allowed to reach a far advanced stage before the diagnosis is made: (1) spread of the disease to the rest of the family and associates; (2) definite worsening of the prognosis for the patient; (3) increase in length of hospitalization with its consequent increase in cost to the state and/or to the patient.

There are many examples at the Harlingen State Tuberculosis Hospital of several members of the same family hospitalized at the same time for far advanced pulmonary tuberculosis. There is one particular example of 5 members of the same family, all with far advanced disease and all admitted at the same time in early 1956. One died 48 hours after admission; 2 are still hospitalized and hopeless; and the other 2 were dismissed not long ago after more than 24 months of hospitalization.

There is also the tragedy of the child, under 7 years of age, admitted with tuberculous meningitis, all too frequently sent to the hospital when it has already become a "vegetable." Reviewing the histories of this type of case, one finds, much too often, that the disease was allowed to reach this distressing stage either because the family took the child too late to the physician or, what is even more alarming, because, even with the child under medical care, there was no thought or consideration of tuberculosis meningitis until it was too late. The great majority of these children recover from their meningitis if treatment is started during the first week of the onset of symptoms using isoniazid in combination with para-aminosalicylic acid and streptomycin. At this time, there are also less neurological sequelae, the frequency of which increases proportionately with the delay before treatment is started.

Regarding the length of hospitalization, there is a marked difference between a minimal, moderately advanced, and far advanced case. The average patient with minimal disease may be dismissed from the hospital after 6 to 9 months of hospitalization and antimicrobial therapy, provided that the medication can be continued on the outside for another minimum of 6 months. The moderately and far advanced cases require a minimum of 18 months, and frequently more, of hospitalization, in addition to which, surgical intervention is much more frequently needed.

A significant number of patients whose disease is as hopeless as when they were first admitted to the hospital several years ago have reached this stage through their own lack of cooperation by leaving the hospital against medical advice before their disease has become inactive and by discontinuing their treatment. Fortunately, since late 1956, the provisions of the sanitary code of Texas have made it possible to quarantine these patients in the hospitals. The leaving against medical advice (AMA) rate at the Harlingen State Tuberculosis Hospital has decreased from 59.5 per cent in 1956 to 17.4 per cent in 1958.

Early diagnosis and treatment would result in a marked change of the figures regarding the extent of the disease, the possibilities of spreading the disease, and shortening of the length of hospitalization. What is also extremely important, the cure of the cases with minimal disease can be achieved with a minimum of residual damage to the pulmonary parenchyma and bronchial tree. Compensatory emphysema and residual bronchiectasis (when bronchiectasis is extensive and bilateral) are the two sequelae of far advanced disease, both of which are disabling and for which there is no effective treatment.

—CARLOS JUAN QUINTANILLA, M.D., Harlingen.

As Others See Us

Oh wad some power the giftie gie us
To see oursels as others see us!
—Robert Burns

Contrary to what some insist, the medical profession as well as the individual physician in it is respected generally. The criticism is that doctors usually take no real interest or responsibility in the development and betterment of the community in which they live.

These views were expressed rather consistently in informal discussions by participants in the 1959 Institute for Organization Management sponsored by the National Chamber of Commerce in Houston in July. Represented were approximately 200 management leaders in Chambers of Commerce from 17 states, familiar with situations on the national, regional, city, and small town levels, and 24 executives of associations in 8 states, ranging through a variety of service, philanthropic, industrial, and professional interests. The registrants in the institute were well seasoned, intelligent, and articulate.

Repeatedly these men commented that although more physicians than formerly are becoming active in undertakings for general community betterment, the typical doctor at most participates in programs relating directly to health or perhaps in a single type of project which he rides as a hobby. If the doctor does ally himself with groups which promote the general well-being of the community, he is likely to pay dues, lend his name to the letterhead or membership roster, and consider his responsibility at an end, never fully giving of his ideas, time, money, and prestige.

The excuses most frequently voiced for failure to take part in community activity, it was noted, are that the physician is too busy and his hours are too irregular to permit his participation. But what of the banker, the industrialist, the small business owner who works equally long hours yet finds time to devote to many community efforts? What of the respected physicians who do manage their schedules to become well recognized as civic leaders?

The real reason why most doctors fail to align themselves with community efforts, these friendly critics suggested, is their lack of interest. Their education and their professional climate have not created an inclination toward community consciousness outside the limited scope of health care, and except for a few who have a vibrant natural interest, physicians need to learn to be civic minded. As they enter into civic activity, they increasingly find enjoyment and satisfaction in it.

The physician, the Chamber of Commerce and organizational representatives emphasized, has a multipurpose role in the community: as healer and as leader. He is sorely needed in both areas.

These observations and comments underscore once more the need for more and more physicians to think seriously of their responsibility to the community and to their profession. A physician is a member of the human race and of his community long before he enters his career in medicine. His responsibility and self interest in the community do not cease when he adds M.D. to his name. This being true, nonmedical persons will have increased respect for and goodwill toward that physician who does not shirk his civic duties and through him will learn to admire and be led by that which is commendable in the medical profession generally.

President's Page

OUR PROFESSIONAL ALLIES

DR. YEAGER

Too often we feel that, to the public, we are the sole representatives regarding matters of health. This feeling is entirely erroneous. To the public, the druggist, hospital administrator, physiotherapist, nurse, and dentist are as much a part of medicine as is the doctor.

"Doctor bill" is an all-inclusive term. How many times have we heard an individual say that he has paid $5,000 in doctor bills only to find that his actual doctor bill was about $300 while the rest was for hospital residence, nursing service, dental care, and drugs. This is not willful misrepresentation on the patient's part but represents how he actually feels about his total health costs. Realizing this, it behooves us to take the lead, not only in explaining the various facets of health costs but also in helping to upgrade the prestige of our medical kin.

To accomplish these aims, we must develop close liaison with the various paramedical organizations. We need to teach them our problems and we must learn theirs. Doctors have the greatest respect for nurses, and I believe the reverse is also true. However, on matters of national policy, such as social security, governmental medical facilities, and the like, the two groups are too often on opposite sides of the fence. By meeting with nursing groups and learning their problems, and by mutual education and working together, we can help them to accomplish through free enterprise those things which they now too often look to Washington to solve.

In my late teens, I was stopped by an officer for speeding. He said: "When you speed through my area, you show disrespect for me. You respect me and I will respect you." That was much more effective than a ticket, and I have never forgotten the lesson. It would be well to remember that when dealing with our allied professions—you respect me and I will respect you.

F. W. Yeager, M.D.

ORIGINAL ARTICLES

The Art of Helping A Nervous Person

WALTER C. ALVAREZ, M.D.

Chicago, Illinois

IT IS SAD that one can find in books on neuroses and psychoses many chapters on the *treatment* of mental troubles, but rarely can one find anything simple and practical on the difficult art of *handling* a nervous patient. Every physician with experience knows how useless it is for him to try to treat a highly neurotic and hypersensitive and overcomplaining woman if all he does is to get her angry when he tells her that he hasn't been able to find any organic disease to account for all her aches and pains. What good will it do to give her a tranquilizer if she leaves his office disappointed, ashamed, let-down, outraged, and with the feeling that she hasn't had an examination complete enough to reveal the focus of organic disease which she is sure she has? Often the woman feels that the doctor has insinuated that she is a "darn fool" who is perhaps faking her illness and enjoying her symptoms.

GIFT FOR PSYCHOTHERAPY

Born with Gift for Psychotherapy.—Some of us physicians were born with a gift for psychotherapy, and we are lucky. We can have much pleasure in practicing. Other men, equally able, failed to get the gift of handling nervous people. Dr. T. A. Ross, the great British psychiatrist, used to say that if a physician finds he has no liking for neurotic people; if he hates to be bothered with them; if he doubts if they really suffer, and sometimes he gets a bit disgusted with them, then he ought not to try to treat them. As soon as he sees that a woman is neurotic or psychotic he ought to refer her quickly to someone he has found who likes that type of practice and handles it well.

Need for Liking People.—Often, when I was teaching graduate medical students, and one would come asking me to help him get rid of a crotchety woman with whom he had had an unpleasant session, he would admit that what had happened was that he had taken a dislike to her, and as a result, she had promptly taken a strong dislike to him. When I went to see if I could calm her down, I had no trouble with her because she was an unusual character, and I enjoy "characters." When she sensed that I liked her, her hostility melted away, and soon we were chatting like old friends. Many a time when I have been asked by a young colleague to calm down a crabby man, I have soon found that the old fellow's gruffness was only a protective mechanism, used to hide the fact that, inside, he was shy and a bit afraid.

SIMPLICITY AND KINDLY INTEREST

Need for Plain English.—One of the greatest needs I know of in the practice of medicine is for developing skill in talking to patients in simple everyday English such as they can understand. I can remember one day hearing one of America's best known physicians saying to a day laborer that his NPN was too high! Another time, I heard a great heart specialist explain to a farmer that his EKG showed a left ventricular preponderance! Why can't we doctors see that talk like this is worse than a waste of time? It does the cause of medicine harm. How often do we say to a nervous woman, "Your trouble is purely functional!" I fear I must have said it many a time. But, years ago, when Dr. F. C. Redlich asked 25 of his more intelligent patients what they thought "functional" meant, as compared with "organic," 3 out of 4 said they had no idea.

Dr. Walter C. Alvarez, professor of medicine emeritus of the University of Minnesota (Mayo Foundation), now practicing in Chicago, editor-in-chief of *Modern Medicine*, and syndicated newspaper columnist, presented this address at the General Meeting Luncheon, Texas Medical Association annual session, San Antonio, April 20, 1959.

Liking people is important in handling nervous patients. Time spent in letting a patient tell her story and in explaining in simple English why she has distressing symptoms is important. Careful diagnosis in nervous conditions is essential, and greater awareness of this problem is desirable.

I have tried all my life to learn to explain things to patients in simple English with only such words as the patient before me is likely to understand. If we doctors are going to talk every day so that our thousands of poor and middle-class patients can easily understand us—and nowadays they are often unhappy because they can't understand us—then I think we must get into the habit of always speaking, and even writing about medicine simply.

Making Easy the First Interview.—For a shy, nervous, anxious woman, the first interview with a new doctor is often a dreaded ordeal. She wonders whether he will be human, kind, comfortable, approachable, easy to talk to, and perhaps with a sense of humor; or will he be gruff, abrupt, impatient, and unwilling to hear her out? Hence it is that when a nervous woman comes into the office for the first time, the wise doctor will often take a few minutes to put her at her ease, perhaps by talking about some nonmedical subject, such as her home city, or her home doctor, or her husband and her children. Often, if the woman is a heavy smoker, it helps greatly to get her to light up. If the woman has some sexual or disgraceful story to tell, the doctor had better get it out of her at the first interview because, later, she may like him so well, and may so wish to look well in his eyes that she will conceal her secret. Let us remember, also, that if the woman gets to telling her secret story of shame or unhappiness, the doctor had better not interrupt the interview because, if he does, she may never get to talking freely to him again.

Need for More Time with Patient.—Nowadays, as I receive hundreds of letters from laymen who have read my newspaper column, I am impressed with the number of people who say how unhappy they are with their doctor because he will not sit down with them for even 10 minutes to hear their story, or to explain what was found during an examination, or to explain what the laboratory reports mean, or to tell what the disease diagnosed is, or to give a few words of hope. In any number of cases, it is clear that if the doctor had taken even a minute in which to answer his patient's main question, this would have made the difference between a satisfied and grateful patient and a disgruntled one who was outraged both at the particular physician and at the medical profession as a whole.

I know that hundreds of physicians will say, "I haven't the time to talk with these people," but my answer is that, during the many years in which I watched Dr. W. J. Mayo at work, I found that he, who certainly was terribly busy, would always stop when a patient asked a question, and usually in a matter of seconds would explain enough so that the person went away satisfied. For instance, when a distracted mother asked, "What is this Hodgkin's disease my son has," Dr. Will, instead of saying, "I can't stop now to write you a book on the subject," would say, "It is a cancer-like disease which should clear up now with x-ray treatment; then, if we are lucky, it will stay away for 5 or 6 years; by then, perhaps, we'll have a medicine to cure it. Keep hoping."

Need for Talking Out Problems.—So often, a patient with nervous troubles will be almost cured just by being allowed to tell her story to the physician. As I write this, a woman telephones to thank me from her heart for having talked yesterday with her son who was born a homosexual. The poor fellow had been suicidal because of his feelings of loneliness and isolation and shame. The mother says that just the fact that now he has found someone who will listen to him without showing any disgust has changed his whole attitude, and has given him a great lift.

Occasionally, I have been puzzled when, after letting a woman talk to me for a while, she has said she was cured. She has picked up her things, and has gone home happy and satisfied. Once when, in my perplexity, I asked the woman what I had done to cure her, she said, "For years, I have grieved and thought of suicide, feeling that if people only knew of the sin I once committed, I would be an outcast and a pariah. But, evidently, I am not beyond hope, because as you listened to my confession, you showed no sign of shock or disgust—in fact, you obviously like me. So I am going home well."

A man just came in, scared to death because his heart has been missing beats. After reading much about coronary heart disease, he has been sure that he must be headed for an early death. All I had to do was, first, to look at his electrocardiograms and show him that all he has are occasional extrasystoles. I explained the mechanism of their coming, and why a little extra beat will cause the next regular beat to be so strong as to make a distressing and frightening thump in his neck. Then I told him that my father worked hard and lived happily with extrasystoles from the time he was 40 until he was 84. I told him how Sir James Mackenzie years ago showed statistically that extrasystoles usually are harmless; and away went my patient, apparently cured.

EXPLAINING WHAT IS WRONG

Need for Explaining to Patient.—The first thing all of us must try to learn is the art of explaining to a nervous woman how it can be that she, who hasn't a gallstone or a "fibroid" to justify herself, is suffering so much. I must admit that, after 50 years of trying to learn this art, I still haven't mastered it en-

tirely. I am sure that some neurotic women with "negative findings" leave my office disgruntled and with only one idea, which is quickly to find another physician who will give more and more tests until he finds something he can operate on and take out.

In dealing with such a woman, the first thing to do is to give her half an hour or more in which she can talk and tell her story. Many a patient of this type has told me that she loved her chiropractor much more than she loved her family doctor because the chiropractor let her talk and listened to her. This, alone, she felt, was worth the money she paid. Often the woman who hasn't had a chance to tell her story of unhappiness and strain cannot be expected to go home satisfied. She has sense enough to know that the doctor should be taking into account the fact that she has been "going through hell" with an alcoholic husband, a dictatorial mother-in-law, or a delinquent son.

Later, when the examination has been made, when the reports of the tests are in, and nothing significant has been found, the physician must explain in simple English how it happens that a person with "negative findings" can still be so miserable or in such pain. The more he knows of the physiology of the nervous system and the way in which "storms" come out of a disturbed brain, the more satisfying will be his explanation. He must always begin by showing sympathy and by maintaining that pain due to nervousness or fatigue or fear is just as bad—or perhaps even worse—than is the pain due to an ulcer. Sometimes, I tell the woman of the time when my little daughter had a terrible pneumonia, and my great fear for her gave me a most distressing pain in my abdomen. Actually, when it comes to dealing with nervous women, the sensitive physician who has at times suffered from nervousness, himself, has a great advantage over the man who has always enjoyed mangificent health and hasn't a "nerve" in his body. One of my great assets in handling nervous patients is the fact that, after my influenza in 1918, I went into a fatigue state in which, for weeks, I was unable to stand up to more than an hour's work. I could not read a long article in a journal; and if I tried to see a patient, the sweat broke out on me, and I got so jittery I had to quit. For months, I was without much ability to sleep. This experience was very trying, but, today, I am grateful for it, because it taught me much about neuroses and the acute suffering they can cause.

"Nothing the Matter."—As I used to watch young colleagues at work with patients, I was impressed with the fact that often when they dismissed a woman with the statement that there was "nothing the matter with her," they thought their work was done—and well done. There was no need of spending more time on the problem of that particular patient. But I would say, "Might it not be that instead of your job's being done, it should be beginning? Let us say that this woman has traveled 1,000 miles to get help. Surely, there is *something* the matter with her. Surely, we must see why she is not pleased or satisfied with our brief statement that there is 'nothing wrong.'"

"As she says, she still has her pain or headache or indigestion, or whatever it was that caused her to seek relief. Might it not be interesting, even just for us, and for our continuing medical education, to try to find out what is wrong with her?"

An important point is that, in many cases, our statement that nothing wrong was found after a good examination—instead of being reassuring, as we expected it to be—was terribly frightening to the patient. It made her feel that she must have some awful disease, or some rare unknown disease, with which the medical profession cannot yet grapple.

To show what can happen: One day, I was asked to see and calm down an unmarried woman of 40 who had become embroiled with one of my younger colleagues. She had come a long distance complaining of paralyzing sick headaches which were causing her to retch for all of a day or two. These spells were coming so frequently that she was faced with the loss of her job as buyer in a big store. This was doubly frightening to her because she was taking care, not only of herself, but of her invalid mother. After a negative examination, my colleague had told her simply that there was "nothing the matter" with her; she could take some aspirin, and she should pay her bill at the cashier's desk. When she came back to beg the doctor to do something more for her, he lost his temper and told her not to bother him again. Curiously, he could not understand why terror had struck into her heart—terror that she and her mother would soon be on relief.

When I sat down with the woman, my first concern was to find out why she, at her age, had gotten back her old migraine in a severe form. What had gone wrong in her life? In 10 minutes, I learned that what had happened when her old illness flared up, was that she had fallen in love with a handsome and attractive man who, unfortunately, had turned out to be an alcoholic drifter. She was "crazy to marry him," but she had sense enough to see that she shouldn't. It was the terrible conflict over this decision which had caused her to go from one migrainous spell into another. We agreed in a few minutes that she would be unwise to marry the alcoholic, and hence, she should stop seeing him. Then, I gave her some Gynergen that would stop a migrainous spell when it started to tune up. That was some 15 years ago, and every Christmas since then, I have received from the woman a grateful letter.

When she got rid of the man, she soon found another much better one, and with marriage to him, her headaches quit coming.

Now I cannot brag about a case like this because the diagnosis was ridiculously easy, and with the diagnosis made, the treatment needed was obvious. The only reason I tell this story is to make my point, which is, again, when there is "nothing the matter" with the person, our work should *begin, not end.* Often, the results of chatting for a few minutes with the patient are so rewarding that they make the practice of medicine a joy.

Need for Explaining Hypersensitiveness.—In many cases, the best thing a physician can do is to explain to his patient—usually a neurotic woman—that many of her symptoms are due purely to her great hypersensitiveness. Let him remind her that she feels or smells or hears all sorts of annoying things which less sensitive persons do not sense. For instance, when she and her husband sit down in a restaurant, soon she feels such a draft on her neck that she has to get up and move to another table. Her husband can't feel any draft. Again, perhaps, she has to move again because she is so sickened by smells coming from the kitchen, or she is so greatly disturbed by the talk of the people at the next table. The husband doesn't notice these things, but there is no question that his wife is upset by them. In summer, she may be greatly distressed by coming into an air-conditioned store or going out of it. Or, perhaps, she is upset because the windows in an air-conditioned room are closed, and she feels she is suffocating for lack of any obvious air current. Then, perhaps, a dry wind comes up out of the South, and with this, she gets a migrainous headache. Or, a storm approaches 100 miles away, and promptly her head or her joints or her abdomen begins to ache. The physician may thank his lucky stars that he isn't married to a woman this sensitive, but if he is to be a good doctor, he must learn to help women of this type. He must be sympathetic, and he must try to show the woman that it is her hypersensitiveness that will always be causing her some suffering. If only she could become as insensitive as a professional wrestler, she would be well.

Need for Explaining How Symptoms Are Produced.—As I said at the beginning of this paper, a physician's success in practice can depend largely on the skill with which he explains to many patients how it happens that they, who haven't any sign of organic disease, can suffer so much, and be so miserable. Often, the doctor must remind his patient that she can get a palpitation or a stomach upset or loose bowels from excitement or fear or anxiety. He has to remind a choleric man that, sometimes, he can go all to pieces nervously for a while after blowing his top. He has to keep telling nervous persons that their symptoms are real, and that their pain or their nausea can be very trying, even if it is due purely to anxiety.

Often, we should explain to people that, in the cases of many sensitive persons, when the brain gets overactive, it sends out storms along the nerves—storms which will upset the activity of the heart, the digestive tract, the urinary bladder, and perhaps the sweat glands and muscles in the skin. These nervous storms produce the "tizzies" that upset and worry so many people.

Nervous Pains Are Real.—To show that nervously produced pains and distress are real, I often tell the story of two women who, in my office one day, taught me much. One, an old farm wife of 65, said she had a big cancer of the stomach, but it wasn't hurting her at all, and so she didn't need any treatment. It was her daughter who much needed treatment because, for a week, she had been vomiting so constantly that she had become dehydrated. What was the matter with the daughter? Only fear over what was going to happen to her adored mother! As I say to my patients, remember that mental picture of the two women—one with the worst possible disease of the stomach, and no symptoms, and the other, with nothing physically wrong, and severe symptoms!

GETTING THE HISTORY

Nervous Breakdown.—Many a time I have gotten nowhere with a history until I have asked the woman if she ever had a nervous breakdown. Then came the story of one or more typical psychotic depressions, and perhaps a story of one or more visits to a psychiatrist or a mental hospital. I may find that, because of the woman's failure to tell this story, she induced some surgeons, on several occasions, to operate and explore her abdominal cavity.

Unhappiness at Home.—Often, it is not easy to get a woman to tell the truth about her sorrow or unhappiness at home. Because she thinks it is not cricket to complain about the man whose bread she eats, she will at first deny strongly that there is trouble at home. A good way of finding out then if there is serious marital unhappiness is to ask her, casually and in a matter-of-fact tone, if she ever thinks of a divorce. Then she will say, "Well, we have discussed it, but he won't let me go." Obviously, any woman who is asking for a divorce or even a trial separation must be decidedly unhappy in her marriage, and this is likely to be an exciting cause of her illness.

Another helpful question that should be almost routine is, "Are you happy?" If that were asked of

every woman in the office, there would be many thousand fewer operations performed each year. Commonly, before answering, a woman will hesitate for a moment, and this will give her away. Then the doctor will know that a story is there, and he must go after it and get it. When a woman admits thinking of divorce, I show her an imaginary button I have on my desk, and I say, "Press that and you'll be back from Reno with your decree in your hand." When the woman won't touch it, I say, "Evidently, you aren't going to get a divorce, so you had better quit talking about it, and had better settle down and try to make home a better place."

Better Histories.—As I said at the beginning, many of us aren't taking adequate histories, and without adequate histories we are bound to make hundreds of wrong diagnoses. A hundred times, we will order a useless cholecystectomy if we don't learn that the gallstones found are silent, and all the woman's symptoms are those of a fatigue state, a situational neurosis due to unhappiness or strain at home, a beginning psychosis, or a little stroke.

As I was writing this, a woman telephoned to talk to me about her nice husband who, the day before, had been referred to me with an x-ray diagnosis of a duodenal ulcer. In a few minutes, I saw that his history was not that of an ulcer but rather of some functional disturbance. Unfortunately, I failed to recognize a mild form of the "water brash" and morning retching of the old bartender, and because the man had none of the physical signs of an alcoholic, I did not think of chronic alcoholism. Stupidly, I failed to ask, "How much whiskey do you drink every night before you go to bed?" His wife told me that actually he is a heavy drinker; and this, plus his great unhappiness over his having lost a fine job, and having had to come far down in the world, is what is wrecking him.

One of the lessons that we can all learn from the many cases like this is that my good friend, the doctor who accepted without question the x-ray diagnosis of ulcer, made a very common mistake. For years, I kept trying to teach my students the unwisdom of accepting a ready-made diagnosis when it cannot possibly be causing the syndrome complained of.

I am reminded of a sweet old lady who had her silent gallstones removed because of a burning, constant misery over her left hip. This could not possibly have been caused by cholecystitis, and so the operation did no good. One or two questions directed to her son showed that the burning misery had come one day with a typical stroke. Because this had left her mentally dulled, she had not mentioned her "collapse on the street" to either her doctor or to me.

RECOGNIZING THE PROBLEM

Reluctance to Recognize Psychotic Patients.—One of the things that bothers psychiatrists today is that most of us nonpsychiatrists are failing to recognize the person who is going insane, and whose symptoms are those of *physical* discomfort, feelings of fatigue or toxicity or chronic infection, with heart-consciousness, nausea, dizziness, abdominal pain, and an inability to work. So often, we fail to recognize the shy, retiring schizophrenic who won't look us in the eye, and who answers our questions in a curious, mentally disorganized way, or the manic-depressive person who is almost too tired to get out of bed in the morning but who feels fine by late afternoon.

As I was writing this, in came a nice looking married woman of 30 who talked most of the time about her abdominal pain. For this, she had had a futile appendectomy. I am sure the surgeon would not have operated if he had only talked with the woman long enough for her to come out with the story of an agoraphobia so bad that she can hardly go out alone to do her shopping at the corner. Accidentally, as I went on chatting with her, I learned that she did not have her small child with her in her home. Why not? Because she was afraid she might kill him. Hence, she gave him to her mother for safe keeping! More questioning, and it became obvious that the woman has a postpartum psychosis.

Medical Teachers and This Problem.—One of our great difficulties is that some of our teachers of medicine are not as yet sufficiently concerned with the improvement of this situation. As some of them freely admit to me, they cannot teach neuroses as well as they would wish because most of their training before they went into clinical medicine was in a biochemical laboratory! Worse yet, their heart is still in that laboratory. As one of my good friends, a professor of medicine, admits, almost all his interests are in the study of the chemistry of metabolic diseases such as atherosclerosis, diabetes, gout, and porphyria. He had almost no training in the recognition and treatment of the neuroses and the minor psychoses, and, as he says, the less he sees now of nervous women, the better it will suit him. He admits that the basic training of teachers in medical schools having been chemical in nature, he has a hard time finding men who can and will teach their students about the neuroses.

SUMMARY

Writers on neuroses and psychoses rarely discuss the difficult art of handling nervous patients. Often, treatment is futile or impossible if the handling of a difficult person is poorly done, so that the patient

becomes dissatisfied, unfavorably impressed, or perhaps enraged. Most important in a physician is an inherent liking for people. Then they will like him. The man who dislikes nervous people had better not try to treat them.

There is much need for a doctor's learning to explain disease to patients in simple, understandable English. Today, there is great need for a physician's spending more time talking to patients and answering their questions. In many cases, if a woman patient can tell her story, she will be almost cured. There is great need for explaining to a patient how it happens that she, who has no demonstrable disease, suffers so much.

The physician must convince the woman that he is sure her distresses are real. When many a physician tells a patient she has "nothing the matter" with her, he thinks his work is done. Actually, it should be beginning. Why is she so ill? What has gone wrong in her life? The fact that nothing has been found often makes the person's illness many times more alarming to her. Often, a physician should explain to a woman why most of her distresses are due to her hypersensitivity. Her "tizzies" are due to storms coming out of her tired or erratic brain. Today, physicians commonly fail to recognize that a person's illness is a nervous breakdown. There is great need today for not accepting as the diagnosis a silent gallstone or uterine myoma. That is something which could not possibly explain the syndrome. It is to be hoped that soon the teaching of students in regard to neuroses will be much better.

♦ Dr. Alvarez, 700 North Michigan Avenue, Chicago.

Southwestern Foundation Votes $93,800 for Medical School Aid

The University of Texas Southwestern Medical School was given appropriations of $93,800 to augment its budget for the year beginning September 1 by the board of trustees of Southwestern Medical Foundation. This sum was voted upon at the foundation's annual meeting May 26.

This amount conformed to the request of Dr. A. J. Gill, dean of the school, for funds to supplement salaries, administrative expenses, and travel for the coming year. The bulk of the money, $84,300 will go to supplement salaries.

Karl Hoblitzelle, president of the foundation, told board members that the foundation's assistance, particularly in the area of salaries, permits the medical school to compete with other outstanding institutions for top medical teachers.

The following officers of the board were reelected: Karl Hoblitzelle, president; George L. MacGregor, vice-president; J. L. Latimer, vice-president; Harold B. Sanders, secretary and general counsel; and Fred F. Florence, treasurer.

The Development Of Modern Concepts of the Coronary Circulation

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RECOGNITION of the clinical and physiological importance of the coronary arteries is an accomplishment of the last 2 centuries. Symptomatology arising from diseases of the coronary arteries, on the other hand, has been described as early as the first century A. D., when the Roman stoic philosopher, Lucius Anneaus Seneca, faithfully recorded the symptoms of angina pectoris on himself.[1] The early clinical description of angina pectoris is not surprising. Preoccupation with this malady by physicians has preceded physiological studies of the coronary circulation by hundreds of years.

Although neither the coronary circulation nor the circulation of the blood and the role of the heart were understood or described by the Egyptians, some idea on coronary disease and on atherosclerosis of the large vessels in general is given in the studies of Ruffer, who in gross and histological studies of the hearts of Egyptian mummies, found calcifications and atheromas in these ancient arteries. Their studies were made possible since the heart as the most essential organ of the body was carefully left in situ by the embalmers and not removed with the other organs. As it says in some Egyptian religious texts: "The welfare of the dead man is safeguarded if his own true heart is with him."[2] The etiology of atherosclerosis as found in these mummies of the twenty-first dynasty of Thebes is as obscure now as it was 3,000 years ago. It is possible that the atherosclerosis of the coronary arteries and the aorta as found in the mummy of the Priest of Ammann may not have been present in the laborers who built the great pyramids. It is likely that the diet of the higher classes of Egyptians was a great deal richer than that of the laborers who entombed them.

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Neither the Greeks nor the Romans had any idea of the importance of the coronary circulation or the circulation in general; vital spirits and animal heat were implicated as the sources of energy of the heart beat. In Greek medicine, the two methods, that of philosophy and that of science, stood face to face for a time. The struggle between them was short. Medicine, almost the only branch of Greek science accurately studied, came out second in this fight, and medical science gradually degenerated from rational treatment to wild speculation and even quackery and superstition.[3] The transcendent genius of Plato won the day and with this, accurate science was defeated. It is possible that the coronary arteries were observed by the outstanding physicians of the Alexandrian school, Herophilus and Erasistratus. However, neither they nor Galen had any knowledge of their function. For Galen, the heart was the center of organic life, the immediate residence of the animating principle.[4] "The source and as it were, the fireplace of the innate heat by which the living organism is directed and controlled."

The medieval system of science was neo-Platonic and with it were mixed ingredients of righteousness, religious faith, and asceticism. There was no place for experimentation. The first physician to write after Galen on the heart was Mondini de Luzzi, who held the chair of medicine at the University of Padua in 1315. He explained the crucial form of the heart by the fact that it is the source of animal heat and "because a pyramidal form is the specific figure belonging to the principal of heat."[5] During the whole Middle Ages the teachings of Galen were accepted without reservation, and although anatomy was studied, the spirits of the time forbade any interpretation of findings that may have been in disagreement with Galen's writings. Berengario da Carpi, professor of Bologna, who lived 2 centuries after Mondini, interpreted the pyramidal form of the heart by stating that the point of the organ is small because "this part, lying in contact with the walls of the chest, is the one likely to be injured during its movements and consequently, the smaller it is, the less injury will be received."[6]

It is almost unbelievable that Vesalius published his most important work "De Humani Corporis Fabricia" less than 30 years after the writing of Carpi's work.[7] Vesalius demonstrated the coronary vessels and Fallopius, a student of Vesalius, followed suit.[8] Leonardo da Vinci in his drawings clearly outlined the coronary vessels and their tributaries. Two of these drawings are dated from 1512. Obviously, the dam of ignorance which medieval superstition had built was broken by the advent of humanism with its emphasis on man. This is best expressed in Roger Bacon's statement in the thirteenth century that, "there are two modes in which we acquire knowledge, argument and experience. Arguments shut up the question and arguments give no proof, nor do they remove doubt and cause the mind to rest in the conscious possession of truth, unless the truth is discovered by way of experience."[9] And Leonardo da Vinci said, "whoever appeals to authority applies not his intellect, but his memory."[10] It is likely that Andreas Vesalius would have discovered the circulation of the blood and with it the role of the coronary arteries had he remained in Padua. But he was a schizoid personality, a "rolling stone," and there is evidence that he was withdrawn and melancholic.[11] Apparently he was driven by an unexplained feeling of guilt and terminated his scientific work at a young age.

CORONARY CIRCULATION RECOGNIZED

William Harvey in his monumental work "Exercitatio Anatomica de Motu Cordis" in 1628 realized the role of the coronary arteries in the nutrition of the heart, since he wrote "besides, if the blood could permeate the substance of the septum, or could be imbibed from the ventricles, what use were there for the coronary artery and vein, branches of which proceed to the septum itself, to supply it with nourishment."[12]

Harvey's scientific antagonist, Jean Riolan, carefully dissected the coronary vessels and confirmed the findings of Vesalius and Fallopius on their origin, but he did not associate them with the nutrition of the heart as Harvey had done. Riolan rejected the circulation of blood through the lungs, considered the liver still as the organ of blood formation, and believed in the passage of blood through the interventricular septum.

Thus, we see that at the termination of the seventeenth century, the coronary circulation had been

Dr. Richard J. Bing, formerly professor of medicine at Washington University School of Medicine, St. Louis, and now professor and chairman of the Department of Medicine at Wayne State University School of Medicine, Detroit, presented this paper as a refresher course during the Texas Medical Association's annual session, April 20, 1959, in San Antonio.

The development of concepts of the coronary circulation is traced from the ancient Egyptian, Greek, and Roman civilizations through modern times, with particular emphasis on those periods of history in which the most significant progress was made. The role of nutrition and endocrines in coronary artery disease is a matter for still further investigation.

described and its function had been recognized grudgingly. The idea of the formation of vital spirits and of animal heat in the heart had succumbed to the astute physiological experimentation of Harvey. Vesalius may be considered as the end of an era and Harvey as the beginning of a new one.

During the seventeenth and eighteenth centuries, physical sciences made tremendous advances but physiological investigations were few and far between. One of the first to study the effects of ligation of the coronary arteries was Pierre Chirac.[13] He concluded that ligation resulted in cardiac standstill. He was a member of the faculty of Montpellier, France, and was, according to Senac's description, an arrogant and pompous individual. He and his greater contemporary, Raymond de Vieussens were bitter enemies. But since Chirac was on the faculty whereas Vieussens was what we might now call "part-time," the latter was defeated. Of the many advances Vieussens made in the knowledge of the anatomy of the heart and the coronary circulation, the one he himself esteemed most was his discovery of the so-called third circulation which takes place through the vessels now wrongly called Thebesian.[14]

More than 2 years after the work of Vieussens had appeared, Thebesius took up the same subject.[15] But as Senac said, "he showed more self assurance than good faith in his dissertation; if he mentions de Vieussens, it is as a writer who, following the steps of Broen, has been hunting for the source of imaginary ferment deposited in the little cavities between the columns. Nevertheless, Thebesius is forced at last by the very words of de Vieussens to admit that this writer has discovered vessels opening onto the inner surface of the ventricles; he tries therefore, only to render obscure, the expression of this anatomist."[14]

EIGHTEENTH CENTURY PROGRESS

With less sense for philosophy but with a greater acumen for clinical and pathological events, John Baptist Morgagni described the symptoms of angina pectoris which he noticed in 1707 and published in 1761.[16] He described the case of a patient who was brought to the hospital at Padua because of an incarcerated hernia. He stated, "As I examined the external surface of the heart, the left coronary artery appeared to have been changed into a bony canal from its very origin to the extent of many fingers breadth, where it embraces the greater part of the basis."

We now approach a period in clinical medicine and cardiology in which clinical knowledge of coronary artery disease has made great strides, although little was contributed to the physiological understanding of the coronary circulation. The eighteenth century in which this occurred has been referred to as the age of reason, of toleration, of cosmopolitanism, and of humanitarianism. It is the time of the great English clinicians, Hunter, Jenner, Parry, Heberden, Fothergill, Hall, and the extraordinary individual, Allen Burns. They were not merely clinicians who casually described interesting cases upon which they stumbled in their daily practice. Their observations were more than casual.[17] These men were on the lookout for the new; they sought for explanation of the obscure. They worked with the spirit and technique of original investigators. Hunter himself, a center of one of those groups of English physicians to whom we owe so much, began to suffer from recurring attacks of what is known now as angina pectoris. It is known that he died during a hospital board meeting. The autopsy on Hunter was performed by Jenner, the discoverer of vaccination with cow pox vaccine. Jenner described the presence of intense "ossification of the coronary arteries." Hunter's pupils and friends, Jenner and Parry, must have discussed frequently the subject of angina pectoris though they refrained from giving publicity to their belief in the coronary origin of the condition, fearing a harmful effect on John Hunter, who they knew was suffering from the disease. Parry wrote a book after Hunter's death entitled "Syncope Anginosa" which was based on cases similar to those of his teacher and friend. What made this book outstanding is the logical reasoning as to the disordered physiological process that could induce those attacks. The likelihood exists that Parry had seen and classed as angina pectoris some cases of coronary thrombosis. As he said, "the inner surface of the coronary arteries was found crusted over with a lymphatic exudation not very dissimilar to the matter which forms on the inside of the trachea in croup."[18]

It remained for Heberden to draw a remarkably accurate clinical picture of what he called angina pectoris of which he probably had seen more than 100 cases. However, this great clinician had no conception of the relation between chest pain and coronary artery disease.[19] In his wonderful book he stressed the importance of experience: "The practice of physics," he commented, "has been more improved by the casual experiments of illiterate nations, and the rash ones of the vagabound quacks, than by the reasoning of all the once celebrated professors and theoretic teachers in the several schools of Europe; very few of whom have furnished us with one new medicine, or have taught us better to use our old ones, or have in any one instance at all improved the art of curing disease."[20] Times have changed only little!

One of the most interesting men of this era was Allen Burns. He was an original investigator, a fascinating personality, and a man who fearlessly rejected traditional authority. He published the first

comprehensive book on heart disease in English. At 14 he began to study medicine; at 16 he took upon himself the sole direction of the dissection rooms of his elder brother. He never had a university degree. Of special interest is chapter 7 in his book, "Observations on Some of the Most Frequent and Important Diseases of the Heart," which was published in 1809.[21] He said, "In all the patients who have died of syncope anginosa, where the body has been carefully examined, the coronary arteries have either been found ossified or cartilaginous." He then went on to state, "the heart, like every other part, has particular vessels set apart for its nourishment. In health, when we excite the muscular system to more energetic action than usual, we increase the circulation in every part, so that to support this increased action, the heart, and every other part has its power augmented. If, however, we call into vigorous action a limb, around which we have with a moderate degree of tightness, applied a ligature, we find that then the member can only support its action for a very short time; for now its supply of energy and its expenditure do not balance each other. A heart, the coronary vessels of which are cartilaginous or ossified, is in nearly a similar condition; it can, like the limb, be girt with a moderately tight ligature, discharge its functions so long as its action is moderate and equal. Increase, however, the action of the whole body and along with the rest, that of the heart, and you will soon see exemplified the truth of what has been said."[21]

Translated into the language of modern physiology, Burns said that the increased work of the heart augments the coronary blood flow; that under these conditions the heart can only function as long as its metabolic demands are met by increased coronary flow.

CLINICAL RECOGNITION OF CORONARY HEART DISEASE

During the nineteenth century, three great scientific revolutions took place. The first was the spread of the idea of evolution; the second began with the work of the obscure Austrian monk, Gregor Mendel, who formulated the laws of heredity; and the third new concept is the law of conservation of energy formulated by Mayer and Helmholtz in Germany. Despite these great advances in biology and the physical sciences, the physiology of the coronary circulation did not come into its own until the end of this century and the beginning of the twentieth century. However, important work on the clinical recognition of coronary heart disease progressed during this period. Thus, Sir Richard Quain published an interesting book on fatty diseases of the heart in 1850.[22] To quote him, "I have seen the coronary arteries extremely ossified going directly to the only part of heart affected." John Erichsen performed experiments on dogs in which the coronary vessels were ligated. He came to the conclusion that the average duration of the ventricular action, after ligation of the coronary vessels, was 23 minutes and a half.[23] He stated that the "bearing of these results on the immediate cause of death in some diseases of the heart is sufficiently obvious."

Experimental pathology reached its highest peak in Germany under Virchow's pupil, Cohnheim.[24] Cohnheim, as is well known, coined the phrase "end-arteries," meaning that there are no anastomoses between the branches of the coronary arteries. This has now been confirmed by Wiggers, who found that after ligation of the coronary arteries of the dog, collateral channels between the coronaries, if they exist at all, are of no use whatsoever in acute occlusion of the coronary arteries.[25] By referring to clinical material to support him, Cohnheim also supported the observation that ligation of the left coronary artery leads to immediate cessation of the heart beat and death of the animal. As to the cause for the effect of coronary artery ligation on the heart, Cohnheim examined the possibility that this is the result of oxygen lack. This, however, appeared to him unlikely since oxygen deprivation of the whole animal had quite different results. We know now that oxygen lack of the whole animal leads to a compensatory increase in coronary blood flow. Cohnheim and his contemporaries, Bezold, Samuelson, and Panum, however, finally had commenced studies on the physiology of the coronary circulation. But with few exceptions this work was not done in the physiological but in the pathological laboratory. These investigators were not so much inspired by interest in the mechanics of circulation as by the findings in the autopsy room. Indeed, by the end of the nineteenth century, the pathologic, and to some extent, the clinical consequences of coronary occlusion had been clearly defined by Weigert, Ziegler, Marie, and Leyden.[26, 27, 28, 29]

Weigert clearly described a myocardial infarct, and his greatest contribution was that he stressed that occlusion of the coronary artery can occur gradually.[26] Ernst von Leyden wrote a comprehensive clinical article on sclerosis of the coronary artery which is supported by many case histories. He described acute, subacute, and chronic cases and discussed his clinical material in a masterly fashion.[29]

TWENTIETH CENTURY CHANGES

Much of what has been accomplished on the physiology of the coronary circulation during the twentieth century has been the result of refinement in techniques. Hemodynamic determinations depend

primarily on accurate measurements of pressure and flow. This has been accomplished by the construction of optical or, more recently, electrical manometers. Catheterization of the coronary sinus has made possible the measurement of coronary blood flow in man.[30, 31, 32] Toward the beginning of this century, Bohr and Henriques, working in Copenhagen, measured the coronary blood flow by making the left ventricle pump blood through a reservoir into the left atrium, while the right ventricle pumped blood into the pulmonary artery, which had been anastomosed through the jugular vein. They found a blood flow of approximately 36 cc. per 100 Gm. in the dog.[33] Starling and his group later took issue with these results and concluded that the coronary flow is considerably greater.[34] Using the heart-lung preparation as a feeder for a second heart, they found that about 60 per cent of the weight of the heart flows through the coronary per 100 Gm. of heart weight. Langendorff introduced his preparation for the perfusion of the coronary arteries through the aorta and made numerous determinations of the coronary blood flow.[35] He found that venous outflow was increased during systole. Coronary pressure and coronary inflow also were measured by means of a cannula inserted into the aorta. He stated that the stream velocity has two peaks occurring during each cardiac cycle. He was the first to attempt to relate basic changes in coronary blood flow with alterations in the state of contraction during the cardiac cycle.

The first determinations of coronary blood flow by measuring the volume of coronary sinus blood was described by Morawitz and Zahn.[36] In this country, H. Newell-Martin and W. F. Sedgwick graphically registered the blood pressure in the carotid artery and in a branch of the left coronary artery of the dog.[37] They stated, "We find that whether arterial pressures be high or low, every feature of the carotid pulse occurs simultaneously in the coronary."[37] From these citations from the literature it becomes apparent that the influence of cardiac action on coronary blood flow had been recognized at the turn of the century. It is now agreed upon that at the onset of isometric contraction, the rate of flow into the left coronary artery abruptly diminishes and soon passes below the zero line to appear as backflow. With the onset of ejection from the ventricle and the rise of aortic pressure, backflow diminishes and is rapidly converted to forward flow, which reaches a maximum shortly before the peak of the aortic pressure curve. It then declines, leveling off during the latter part of systole. Coincident with the closure of the aortic valves and the onset of isometric relaxation, the inflow again rapidly augments and, thereafter, gradually declines with the diastolic fall of aortic pressure.[38]

During this century, problems of collateral circulation of the heart also were extensively investigated, and the results have important bearing on clinical reasoning. Blumgart and his group, using special injection techniques, found that collateral vessels develop in a variety of conditions, foremost among them coronary occlusion.[39]

The final chapter in the recognition of coronary heart disease was not written until the 1920's. It will be recalled that during the seventeenth and eighteenth centuries and also part of the nineteenth century, clinical pathologic studies furnished important clues on the role of the coronary arteries in the production of angina pectoris. The work of the great English clinicians of the eighteenth century and that of the German and French pathologists and clinicians of the nineteenth century represents a long series of anticlimactic developments. Even such excellent clinical discussions of coronary occlusion as those presented by Dock, Hammer, and others did not speed up this process.[40, 41] But final recognition of the important role of coronary artery disease was not to come until 1912, when Herrick published his first paper on the clinical features of sudden obstruction of the coronary arteries.[42] One of the greatest achievements of Herrick was that he stressed that the disease can be chronic and need not be immediately fatal.

It was only now, after these clear clinical descriptions had been published and after physiological methods had advanced sufficiently, that the circulatory alterations of coronary occlusions were investigated thoroughly. Wiggers and his school accomplished this fusion between physiological and clinical interpretations of coronary occlusion.[25] Their studies revealed that the coronary vessels are functional end-arteries as demonstrated by the fact that within 60 seconds after coronary occlusion the myocardial area affected by the obstruction no longer shortens during the period of systolic ejection but brusquely expands during isometric contraction.

CONCLUSION

What is the relationship of these historical developments to our modern concepts of the manifestations of coronary heart disease and to the physiology of the coronary circulation? Clinically we have learned that coronary heart disease appears in many disguises, such as angina pectoris, acute coronary occlusion and myocardial infarction, left sided heart failure including cardiac asthma, combined left sided and right sided heart failure, heart block and disturbance in cardiac rhythm, gastrointestinal and substitution symptoms, sudden death, and finally, the latent or asymptomatic cases.[43] Thus, we have learned that diseases of the coronary arteries do not manifest themselves in sudden death alone as was thought

to be the case by most of the eighteenth and nineteenth century clinicians. In addition, more and more we have become conscious of the connection between coronary artery disease and atherosclerosis.

A large amount of work has been done in this field, which did not even exist in the prechemical era of clinical investigation. It could be shown that there are many types of lipids such as esterified and nonesterified fatty acids, phospholipids, and cholesterol; although chemically related, they may have entirely different functions. While it is likely that nonesterified fatty acids serve as immediately available fuel, the function of esterified fatty acids and lipoproteins is more complex. It is known, however, that the metabolism of lipoproteins is regulated by hereditary, hormonal, and dietary factors. Atherosclerosis, particularly of the coronary arteries, is much more frequent in males than in females, and the administration of estrogens causes marked alterations in the concentration of individual plasma lipoproteins.

Further investigations have shown that a number of fats of relatively high iodine number, such as corn oil and cotton seed oil, have distinct cholesterol lowering properties. However, it has yet to be demonstrated that ingestion of unsaturated fats has any beneficial effect on coronary artery disease. It is difficult to translate biochemical studies into clinical results. There is still no incontrovertible proof of the indictment that atherosclerosis has a dietary origin. As far as tests on humans are concerned, this is still largely circumstantial evidence based on the frequent association of fatty diets with atherosclerosis and with hyperlipemia, and of hyperlipemia with atherosclerosis. The situation as regards cholesterol is equally complex. The feeling now is that the diet—but neither the presence nor absence of cholesterol in the diet—influences the blood cholesterol level in man.[44] Since cholesterol is readily synthetized in the body, it is probable that consumption of the usual cholesterol containing foods does not add sufficient cholesterol to the total body content to warrant exclusion from the diet.

All that can be said at the moment with certainty is that the role of nutrition and endocrines in atherosclerosis, particularly in atherosclerosis of the coronary artery, cannot be ignored. These factors are certainly links in the cause and effect chain. As stated by the National Heart Institute, the cure will lie within the realm of dietary and hormonal manipulations.

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A bibliography may be obtained from the author.

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Ionizing Radiation And Public Health

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THE DESTRUCTIVE POWER of the atom in war was unveiled in one scorching flash over the city of Hiroshima almost 14 years ago. But the power of the atom to destroy is not limited to war.

Each time the atom is made to perform at man's bidding, the possibility of great and irreparable damage is present. The power of the atom to destroy in peacetime is something to be reckoned with. When the atomic genie has done its work, man cannot, as in the fable, order his new found slave back into a magic bottle. Radioactive wastes cannot be made innocuous by any method of treatment; they can only be removed to a place where their power is spent harmlessly. The dose effects of ionizing radiation are cumulative and irreversible.

We are entering a new era in the atomic age. The atom is no longer the exclusive province of national government. Its uses are multiplying in industry, medicine, and agriculture. This can mean only that public health must begin playing an ever growing role in protecting people from radiological hazards. Unfortunately, it is a blunt truth that states do not yet have fully operative radiological health programs.

HEAL OR HURT?

Fully half of the amount of exposure that man is subjected to today comes from practitioners of the healing arts. The atom has indeed been an invaluable helpmate in assisting medical science to help people. But when making this observation, we should never forget that the atom, while it can improve health, also can do great harm.

This does not, of course, imply that the good and bad effects of medical exposures to ionizing radiation are divided equally. Medical science has tipped the biological balance sheet in man's favor. The questions to be asked are these: Has it been tipped as far as it might be? Are we as deeply conscious of the medical atom's penalties as we are of its benefits?

To answer these questions, it is necessary to examine the penalties as we know them. And we must recognize, as we do this, that our knowledge is imperfect. What then, are the penalties?

First of all, we know that radiation damage to biological organisms is usually insidious. It presents no new diseases or disabilities but increases the incidence of familiar ones.

There is not much doubt that exposure of human gonads to even small doses of ionizing radiation can result in tragic mutations. But this consequence, awful as it is to contemplate, is difficult to appreciate in any personal sense. Cause and effect can be measured only in terms of generations, and then only by that coldly impersonal index, the probability curve.

Epidemiologic studies point to a probable shortening of life span when levels of radiation are increased. Our concern for the treatment of chronic, degenerative diseases also should prompt us to wonder what effect radiation has in defeating our efforts to prolong useful existence.

Mutant genes also may affect that priceless human heritage—intelligence. Will this effect be adverse? Will increasing radiation lower the average intelligence of mankind? We are not certain as yet, but the signs are pointing the way to further investigation, for certainly mankind will need more intelligence, not less of it, if he is to cope with the complex problems that stretch out before us.

Somatic penalties are only slightly less insidious than genetic ones. Epidemiologists have noticed that the rising levels of radiation man is exposed to show an uncomfortable parallel to the increasing incidence of leukemia. If this is a true relationship, then another question must be asked: What good purpose was served by the "extra" leukemia deaths?

It would be comforting if we could feel completely assured with this answer: "They died of leukemia so that others might survive the ravages of other afflictions we were able to detect and cure by the use of the medical atom." There are those who will object that the question is grossly unfair, since the medical atom contributes only half of ionizing radiation exposure. But these dissenters will be objecting to only half of the question and, therefore, half of the answer. Reason clearly commands us to admit that diagnostic and curative exposures to ionizing radiation are significant contributors to the somatic and genetic penalties we pay for using the atom.

Dr. Herman E. Hilleboe, commissioner, New York State Department of Health, prepared this paper for presentation to the Section on Public Health at the Texas Medical Association annual session in San Antonio, April 21, 1959.

The atom, while it can improve health, can do great harm. Physicians must weigh the disadvantages of radiation against its advantages, use it judiciously, and take precautions to limit damage to a minimum. Education of the individual patient and the public is important, as is a well planned public health radiation program.

Should we not view the use of the atom in the healing arts for what it is: a form of barter with the physical laws of nature. Whether or not we were aware of such a bargain, it has been made. We told nature, in effect: "We will give up so many human lives to leukemia and we will give up so many years of longevity among X number of humans if . . . . If we save so many lives that would otherwise have been lost to tuberculosis, heart disease, and certain types of cancer."

There will be some who will shudder at the thought of the responsibility this bargain with nature involves. "Some things are better left unsaid," is the reply. I would say that, once things are reflected upon and recognized as truth, the uttering of the truth is not only necessary but good. It will help us to realize that the medical use of ionizing radiation is a good bargain that we have made.

From this recognition, we can proceed to examine more exactly the precise terms of the bargain and, finally, see if we cannot drive a harder bargain in the future. Indeed, should we neglect to find ways of driving a harder bargain, there is real probability that we will lose some ground in the future. Levels of ionizing radiation are likely to increase in this age of atomic energy.

This we know: The death rate from leukemia has risen sharply in the past 20 years; it went from 23 per 1,000,000 in 1930 to 60 per 1,000,000 in 1956 in the United States. We welcome those who argue that this increase may be due to changes in diagnostic methods and reporting terminology, for dissent is a stimulus to seek truth. The burden of proof, however, is on the dissenter.

Meanwhile, we are faced with certain observations already demonstrated: There has been an increase in leukemia among survivors of the nuclear detonations at Hiroshima and Nagasaki, among radiologists, among patients who have received radiotherapy, among children whose mothers underwent pelvic or abdominal x-ray examination during their pregnancy, and among others exposed to above average amounts of ionizing radiation.

Various experts already have made guesses on the total leukemogenic effect of ionizing radiation. Some say: "Five per cent of all leukemias." Others say: "No, 20 per cent is more like it." And so the arguments rage. While sincere and learned men dispute the academic merits of these estimates, thousands of human beings are producing weird dwarf cells that tumble through the intricate networks of the body to corrupt, weaken, and finally destroy. Is it not dis-

maying to realize that the greatest numbers of human beings affected by leukemia live in the most advanced, most highly civilized cultures on this planet?

There is yet another line of inquiry which should be pursued. We have noticed a peak of leukemia incidence among children 3 to 4 years of age. The latent period between exposure to ionizing radiation and the development of leukemia hints that this could be a result of exposure to mutagenic stimuli at about the time of birth.

The problem is a difficult one at best. It is being made more difficult by the pseudohealers who draw sustenance from human ignorance. So-called spinographs, which expose the entire human spine, pelvis, and reproductive organs to radiation, are beamed on an unsuspecting public by cultist practitioners unqualified to assess the radiological dangers and unprepared by training to perform medical diagnoses. The time is past when man can afford to indulge those who would needlessly cripple and destroy.

The use of x-rays for diagnosis and treatment is one of the biggest responsibilities the medical profession has assumed. Let us challenge ourselves to measure constantly the harmful effects against the benefits. Let us be continuously aware that the use of ionizing radiation for medical purposes constitutes the largest single source of exposure to the general population. Let us pledge ourselves to use it as sparingly as possible, consistent with standards of good medical practice.

PRECAUTIONS

In nations with well developed medical services such as ours, practitioners impose about 5 rem (roentgen equivalent, man) of exposure per person over a 30 year period. In New York State, for example, if all practitioners could do the same amount of good they now do but could manage to expose patients to an average of 10 per cent less radiation, it is estimated that 1,700 lives of 70 years each could be saved over a 30 year period.* Applying the same statistical yardstick to Texas, 920 lives of 70 years each would be saved by a 10 per cent reduction in this same period. These estimates do not include any genetic improvements that would result from this reduced exposure.

The practicing physician, therefore, can play a leading role in this long-range public health program aimed at preventing damage from ionizing radiation. To do this, he should continually reinforce his knowledge at postgraduate courses on radiologic diagnosis, therapy, and protection. He also should take extra care to educate his assistants on the importance of avoiding unnecessary exposure.

Certain precautions are elementary: Every physician should make a point of having his equipment, even if factory new, checked for proper calibration and shielding. This protects both patient and operator. One effective device is a filter at the tube source that is equivalent to 2 mm. of aluminum. Properly mounted in the primary beam, this device reduces patient exposure to soft x-rays which are of little diagnostic worth anyhow.

Another good device is a diaphragm or cone on the tube. This helps to limit the x-ray beam to the area under examination. Leaded aprons should be placed on the lower part of the fluorescent screen of the photofluorograph. The physician should use the fastest film available and the highest kilovoltage and lowest milliamperage that his machine will deliver, consistent with the taking of satisfactory films. Persons using fluoroscopic screens should wear adapter glasses to permit viewing at lower milliamperage and higher kilovoltage. Fluoroscopy should be kept at a minimum and used only when under ideal conditions of protection. Finally, the physician should know the radiation producing characteristics of his machine under all operating conditions.

A recent survey taken in upstate New York by our State Health Department disclosed that one-third of physicians and 95 per cent of dentists use x-ray machines in their offices. A preliminary check of these devices showed that many preventable hazards existed simply because of a disregard for basic rules of roentgenography and because equipment was neither calibrated nor shielded properly.

Public health physicians have a responsibility too. Mass chest roentgenograms are criticized as a source of excess radiation exposure because of their widespread and frequent use. They are commonly used in screening for tuberculosis, heart disease, and lung tumors. Here again, we are striking a trade with nature, and in doing so we must be sure that the trade is a good one for people. To get the best trade from nature, we limit mass radiography to persons over 15 years of age and we further insist that it be restricted to those people most likely to have the diseases and disabilities we are looking for. We assure ourselves a good bargain by such programs as the roentgen examination of chests of newly admitted hospital patients.

The obstetrician and the pediatrician will have to do some bargaining also. Recent leukemia studies indicate that fluoroscopy of children should be limited more strictly to exceptional cases and radiography used only when absolutely essential. When radiography is used, the number of abdominal examinations should be limited as much as possible to minimize the total gonadal dose.

**This estimate postulates five days/rem of life shortening per person.*

Evidence of fetal harm indicates that roentgen examination of pregnant women should be avoided whenever possible. X-ray pelvimetry to determine the adequacy of the birth passage should be used only in the third trimester, since little information will be available before then.

In diseases, injuries or disturbances of the lumbar spine or surrounding tissue, the physician should consult a roentgenologist as soon as he realizes that a number of x-ray examinations may be necessary. The roentgenologist can minimize gonadal dosage by recommending the number and type of examinations to be scheduled.

But the responsibility which every physician who uses x-ray must assume does not end with minimizing the exposures among his patients. There is also a responsibility to keep exact and cumulative records of these exposures for each patient. The completeness and accuracy of these records requires meticulous attention to details. It would be best perhaps, to consider the National Academy of Sciences recommendation that from birth to age 30 humans be given not more than 10 roentgen units of radiation above natural background amounts. This limit has been characterized as a bank account from which withdrawals should be made wisely.

The need for a radiation exposure accounting system is no less important in industries where employees may be exposed to radiation from industrial or medical sources. These records are also an integral part of a person's medical history. They help the physician estimate cumulative and somatic doses given each patient.

There is yet a third medical responsibility in the use of ionizing radiation and that is to inform each patient on whom radiation is used. Every person has a right to know from his physician what he may expect in benefits and hazards from a given exposure to medically administered radiation. The physician has a duty, of course, to recommend or not recommend a specific exposure, but the ultimate choice belongs to the patient, for it is closely bound with the right every human being should have to determine any matter concerning his own welfare.

Public information is an essential component of a good radiological health program. Control measures cannot be imposed without a full explanation to the public. To neglect this complementary job of public information is to invite fears and misapprehension that can serve only to hinder the development of the atomic energy field and interfere with medical services.

Private groups interested in the development of enterprises that are linked with atomic energy must be assured that their activities will not be subject to arbitrary restrictions. On the other hand, such groups should be well informed on the standards of safety that will be expected from them, and such information should not come at the eleventh hour but as soon as an industry or group is committed to begin a project or build an installation.

RADIOLOGICAL HEALTH PROGRAM

Public health officials can get valuable help from professional societies whose members use radiation in their work. In New York State, the Radiological Society and the medical, dental, and veterinary societies have, at our request, appointed special committees to work with us on radiation problems. These committees have made valued contributions by acquainting members of their societies on new and effective ways of reducing radiation hazards.

Before we plotted out our radiological health program in New York, we gathered a Technical Advisory Committee. It was composed of representatives from the medical and dental societies, the Atomic Energy Commission, the Public Health Service, and other experts. By the time this committee was ready to function, we had already outlined the broader aspects of our control problem, set preliminary objectives, and outlined the scope of activities that we believed the Health Department should engage in. The Technical Advisory Committee reviewed our work and made additional suggestions and recommendations.

We came up with this program plan: Our major objectives were to reduce and eliminate when possible unnecessary exposure to ionizing radiation wherever New York's citizens lived, worked, and played.

We outlined three functions to attain this:

1. Determine the extent and character of our radiation problem.
2. Reduce exposure to radiation by supervising installations and providing assistance to supervising local health units.
3. Gather new information and develop better control methods by conducting research and making periodic evaluations.

To carry out these three functions, we devised an operating program that divided itself into seven activities:

1. To locate all detectable sources of ionizing radiation.
2. To train personnel—one can seldom recruit them.
3. To keep informed of new uses of radiation and evaluate the hazards that they create.
4. To determine the legislative and regulatory needs.
5. To gain support of various professional societies and citizen groups.

6. To encourage self-discipline among persons who work with radiation.

7. To evaluate techniques and results in the control program.

With these objectives and plans, our radiological health program swung into action. Operating with limited personnel, we set up a Section on Radiological Health. An early step was the addition of sections in our Sanitary Code that gave us the power to act. Our Public Health Council in 1953 first enacted a regulation which governs the use of shoe-fitting fluoroscopes. A comprehensive radiation code was adopted in 1955, and further revisions have been made since then on the basis of control experiences.

A regulation adopted in July, 1958, prohibits the use of radiation by anyone not licensed or not authorized to practice medicine, dentistry, podiatry, or osteopathy. This stopped untrained shoe store operators from using shoe-fitting fluoroscopes by prohibiting the sale of x-ray equipment to unlicensed persons.

One of the regulations requires the registration of radiation sources and requires notification when such sources are either newly installed or moved to another site. Report forms are sent to every practicing physician, dentist, veterinarian, podiatrist, and osteopath in the state and to all known users of radioisotopes.

Our department has provided an advisory service to users of radiation and is performing a schedule of inspections that has been limited only by the number of trained personnel in state and local health departments. Since 1955, when inspection was begun, the momentum has picked up.

It was necessary for us to train about 125 engineers and sanitarians to do the field work called for by our program outline. Training became a high priority activity. Our training effort was given a tremendous boost by the help of the radiological health training staffs of the Public Health Service and Atomic Energy Commission as well as the University of Rochester.

Short orientation courses were given to our public health physicians. More extensive training was given to a few of the men who were to administer the programs and give technical advice to district, county, and city health departments. Lack of qualified staff continues to plague us, though not quite as severely as it did when the program was getting under way 3 years ago.

One way we overcame our lack of trained personnel was by encouraging self-discipline among users of radioactive materials. Many large institutions have their own radiation safety committees and radiation safety officers who supervise regulations governing operations.

Sampling of natural background levels in New York State is made at each of the 15 air sampling sites maintained by the Air Pollution Control Board, attached to the Health Department. Our Division of Laboratories and Research has a small staff that conducts service and research in radiological health.

The estimates of gross levels of radioactivity are arrived at by sampling three sources: (1) naturally occurring radio elements; (2) fallout from atomic weapons testing, and (3) discharges from laboratories, hospitals, and industries which use or produce radioactive materials. These estimates and their periodic fluctuations are important knowledge in a control program.

Our Division of Laboratories and Research analyzes water samples from public water supplies throughout the state. These samples indicated that radioactivity increased because of atomic weapons testing. The effect of radioactive wastes discharged into surface streams is not completely known, and a study is being undertaken to evaluate this factor on the Hudson-Mohawk River.

We are maintaining six fallout stations throughout the state to discover total statewide fallout from dust and precipitation each week.

Present air sampling efforts include collection of air particulates to determine gross beta activity. The air sampling network has two existing disadvantages in the collection of radioactivity: (1) only total radioactivity for the period of operations of the sampler is measured—and this is usually 1 day, and (2) there is a 1 to 4 day interval between the time of collection and the actual measurement of the sample.

To overcome these difficulties, we are trying to determine what type of instrument can be devised that will give instantaneous radioactivity measurements of collected air particulates. If such an instrument is perfected, we will then consider the establishment of a statewide instantaneous measurement network. The value of such a network will be immediate if levels of radioactivity increase.

A mobile constant air monitor also would be of great value in our program of evaluating radiological hazards at or near nuclear reactors or at other sites where unsealed radioactive materials are used. This type of monitor could be sent to make special surveys of sites as needs arose.

Milk is another important repository for the radioactive concentration of the bone-seeking isotope, strontium-90. Our plans include the examination of samples at monthly intervals from five selected milk sheds throughout New York State.

It seems worth while to conduct a further study to determine how radioactivity in water consumed by cows affects milk. Present knowledge indicates that water may have a marked effect upon the concentrations of radioactivity in milk.

Certain aquatic organisms collect specific isotopes such as phosphorus-32 in concentrations many thousand times the levels found in their water environment. These organisms present a potential public health problem, since some of them are used as human or animal food. Whenever radioactive wastes are discharged into bodies of water, this problem could become acute. Our control effort will have to focus more on this problem in the future.

The control of radioactive waste disposal should begin at the industrial source. The control agency should have authority to approve the selection of a nuclear installation site and the design of the installation itself.

Our first and basic assumption in site control supervision is that the element of human error will make accidents an ever present possibility. The seriousness of industrial nuclear accidents will depend upon the distribution and density of population, animal life, vegetation, and mineral resources around an existing or proposed installation, and the potential volume of accidental contamination the installation is capable of emitting.

To assess these factors and also to prepare for effective monitoring, a complete survey of nuclear installations should be performed before operations begin. Such surveys determine the natural levels of radioactivity present around the proposed site. With such an estimate, we could easily determine abnormal contamination of the environment once the installation begins operations.

The Health Department already has undertaken such a survey at the construction site of a power company's nuclear power reactor. In cooperation with the local health department and the State Conservation Department, samples are being collected of water, soil, air, plankton, and animal thyroid within a 10 mile radius of the site.

While this has been going on, the power company is conducting an independent survey of potential radiological hazards that might be encountered when the reactor begins operations. What remains to be done is to experiment with various monitoring techniques that can quickly and accurately detect any abnormal contamination of the environment adjacent to the reactor.

When operations begin, the state will maintain regular inspection of the plant operation and conduct continuous monitoring of the environment. The day-to-day volume of radioactive emissions into the air and into both surface and underground water are important measurements that will be carried out in close cooperation with the state agencies charged with control of air pollution and water pollution.

Whether or not larger states should own and control a site to dispose of high level radioactive wastes from industrial installations is a matter for serious consideration in the very near future. Such a plan makes good sense indeed for several reasons.

One sound reason for a state owned radioactive dumping ground is the importance of keeping such sites from being used for any other purpose at any time in the future. State ownership would ensure safe control of such sites in perpetuity.

A second reason for state owned sites would be to encourage nuclear industries to locate within a state. The expense of hauling radioactive wastes over long distances and the uncertainty of securing approved dumping sites are factors that can militate against the growth of atomic energy enterprises within a given geographical area.

In any event, the health menacing implications of improper radioactive waste disposal are too serious to be left outside the purview of governmental responsibility.

An ionizing radiation disaster can strike with lightning suddenness. In October, 1957, the temperature of the atomic pile located at Windscale, England, went up too quickly. Several uranium fuel cartridges caught fire, and a deadly cloud of radioactive smoke belched out. In what seemed no time at all, 30 miles of grasslands downwind of the reactor were thoroughly contaminated.

Milk from the 600 cows feeding in the contaminated grasslands was found to contain iodine-131. One million quarts of milk were condemned. Because of iodine-131's short half-life, this milk could have been used later for dairy processing and cattle feeding. Nonetheless, it was decided not to salvage the milk because of public apprehension over the incident.

One can only guess how much worse the effects would have been if this nuclear accident had occurred during a temperature inversion. The atmospheric contamination would have remained undispersed and immobile to saturate the entire environment.

Accidents like that are a pointed warning to every state with nuclear installations that the development of an ionizing radiation disaster plan should be given high priority. A highly integrated disaster plan takes time, educated effort, and money. When such a disaster strikes, a number of things must be done, and done quickly: plant personnel and the nearby populace must be evacuated; prompt medical attention must be given to the injured; contaminated areas must be cleaned up; public and voluntary agencies must carry out prearranged duties; food-producing vegetation within the contaminated area must be monitored; and there must be medical surveillance of persons consuming suspected crops. The nature of a radiation disaster demands a push-button readiness that no state as yet has accomplished in entirety.

The radiation problems of the future will depend to some extent upon whether or not nuclear weapons testing continues at its present rate, increases, or is stopped. Our sampling results over the past several years in New York State do not give an optimistic picture. Virtually all tests reflect a persistent tendency of natural background levels to rise. The increase has been slow but inexorable so far.

PURPOSE OF PROTECTION

The whole purpose of radiological health protection is the welfare of people. It is worth while that we keep reminding ourselves of this elementary consideration. We grow too accustomed to speaking of "cases," "patients," and "mortality-morbidity rates," and it becomes easy to forget that what we are really talking about is people who are in pain, or dying, or already dead.

But even if we use the word "people" instead of our medical synonyms, have we really overcome the difficulty? Who among us can conjure up a clear mental picture of "people"? The word "people" is also an abstraction twice removed. Try as we might, the only real way of clearing up the trouble is to think, not about people, but about particular persons that we know.

So I would say only that if you find it helpful to think about a particularly nice patient you have in order to motivate yourself into an active concern about your use of x-ray equipment, then the results should be all to the good for both you and that very nice patient. How much easier and more pleasant it is to act upon this deeply personal concern than some of the ponderous old concepts that we are usually clubbed with.

And now I will conclude with an anthropomorphism. Could the atom speak, perhaps it would warn us of its power with these words: "In making me your servant, mankind, take care that I do not become your master."

Dr. Hilleboe, State of New York Department of Health, 84 Holland Ave., Albany, N. Y.

Voluntary health insurance coverage is increasing faster among people 65 and over than among any other age group in the country, the Health Information Foundation reports. Forty-three per cent of the population 65 and older now has such insurance—an increase of almost 40 per cent in the last 5 years.

Seventy-five per cent of the population in the northwestern part of the United States carries insurance against hospital costs, Health Information Foundation states. Comparable percentages for the other sections are 68 for the west, 67 for the north central, and 55 per cent for the south.

Supervoltage Roentgentherapy

Clinical Evaluation Based On 2,000 Cases

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TELERADIUM units containing 5 to 10 Gm. of radium have been in use since 1920 in many of the cancer centers of the world. These units have the advantage of skin-sparing, as the gamma rays of radium are in the million volt range; however, they are not considered supervoltage equipment.

The definition of supervoltage equipment should be given, not only in terms of the wave length of the rays emitted, but also in terms of other characteristics, such as long source-skin distance (SSD). The four characteristics of the million volt x-ray generator beams are:

1. Skin-sparing, because of the phenomenon of electronic build-up below the surface of the skin.
2. Greater depth dose.
3. Better systemic and better organ tolerance because less energy is absorbed, for the same tumor dose, by the surrounding structures and the body.
4. Less absorption in bone. This is an advantage when bone must be traversed, because tissue doses are the same values as those obtained from depth dose tables, whereas with 3 to 1 mm. Cu HVL beam, tissue doses may be 10 to 20 per cent less.

The teleradium units have the characteristics of skin-sparing and less bone absorption, but, as the source-skin distance is very short (8 to 10 cm.), the depth dose is adequate only for lesions that are no more than 3 to 5 cm. deep. Therefore, these units are advantageous only in specific circumstances.

Cobalt-60 emits 1.1 and 1.3 mev monochromatic radiation and can be produced with high specific activity in the high flux reactors. Kilocurie sources can now be no more than 1.5 cm. in diameter. The kilocurie cobalt-60 irradiators can be compared to the million volt x-ray generators in all of the four characteristics, provided the beam is collimated to minimize the penumbra.

The hectocurie cobalt-60 units and the cesium-137

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units are not comparable to supervoltage equipment in all respects. With shorter source-skin distances, the depth doses are similar to those of x-ray machines of 3 mm. to 4 mm. Cu HVL. The energy dissipated in the penumbra can reach a high percentage of the energy in the geometrical beam. The deep organ as well as systemic tolerances are diminished by this irradiation to surrounding structures.

Specificity of action in tumor cells as opposed to normal tissues is not changed by supervoltage roentgentherapy. Radioresistant tumors are also radioresistant to that modality. The superiority of supervoltage irradiation exists only in the ability to deliver higher tumor doses.

With supervoltage, tumor doses must be higher by 10 to 15 per cent because of the difference in radiobiological effectiveness. This loss in efficacy is more than compensated by the physical advantages. The advantages of supervoltage radiation therapy are, however, in turn partially nullified by late sequelae. Subcutaneous and deep tissue fibroses, that develop years after heavy irradiation, can be crippling. The absence of acute skin reactions is an advantage, but can be conducive to unwise radical treatments.

Treatment with irradiation is similar to surgical therapy. Instead of en bloc removal of tissues that contain tumor cells, high doses of radiation must be delivered to the same volume in order to sterilize all tumor cells. Surgery is limited by the problem of removal of all or even parts of vital structures, and in the same way, the delivery of high doses of radiation is limited by the possibility of irreversible damage incompatible with normal life. The volume of tissue to be irradiated remains the main limiting factor. Recovery from radiation damage depends upon reparative function of surrounding undamaged structures, particularly blood vessels—a situation similar to the healing of wounds or burns. If the volume necessary to encompass the whole tumor is large, the tumor dose must be diminished if irreversible damage to vital structures is to be avoided. Consequently, the chance for permanent control decreases. When the cancer is too extensive, or even generalized, there is no form of radiation, whatever the modality and voltage, that can appreciably affect the course of disease.

Tables 1 and 2 summarize the various points. Table 3 gives the distribution of 2,071 patients treated with a kilocurie cobalt-60 unit and a 22 mev betatron, according to anatomical areas and diseases.

Clinical evaluation must be determined according to the purposes for which radiotherapy is employed. These are:

1. Curative therapy, as for squamous cell carcinomas of the head, neck, and cervix.
2. Lasting control or long-range palliation, as in the lymphomas, late breast cancers, and, occasionally, squamous cell carcinomas of the lung and esophagus.
3. Short-range palliation, as in relief of distressing symptoms, such as superior vena cava obstruction from mediastinal nodes, and in alleviation of pain.
4. Possibility of combination with surgery in cases of borderline operability. Radical neck dissections and radical mastectomies with preoperative radiation can be cited as examples.

The advantages of supervoltage radiation cannot be measured entirely by improved 5-year survival rates. The control, even if temporary, of distressing symptoms cannot be statistically assessed.

Dr. Gilbert H. Fletcher, radiologist at the University of Texas M. D. Anderson Hospital and Tumor Institute, presented this paper for the Section on Radiology at the Texas Medical Association annual session in San Antonio, April 20, 1959.

Supervoltage roentgentherapy improves the curative rate with squamous cell carcinomas of the oropharynx, deeply infiltrative anaplastic tumors of the urinary bladder, and late cancers of the cervix. Integration of radiation and surgical procedures is improved. Absence of skin reaction is an advantage but calls for enlarged clinical experience and careful physical planning.

CURATIVE THERAPY

Squamous cell carcinomas of the oral cavity and the stage I and early stage II carcinomas of the uterine cervix are satisfactorily managed respectively by low intensity radium implants and intracavitary radium therapy. These gamma-ray treatments are ideal in that they provide high local dose to the tumor with maximal sparing of surrounding structures. There is no reason to substitute supervoltage roentgentherapy for successful techniques.

Early tumors of the vocal cords are eminently curable by 250 kv. radiation. Supervoltage can be used electively to minimize late skin changes. This is advantageous in the small percentage of recurrences for which laryngectomy has to be performed.

Supervoltage roentgentherapy may be superior in those groups of cancers which respond poorly to conventional therapy, because of insufficiently high tumor doses. In the head and neck area, cancers of the oropharynx (soft palate, tonsillar region, base of tongue, and pharyngeal walls) form the most striking group. The planning and performance of treatment are remarkably easier with supervoltage. Better control is obtained with supervoltage therapy of both

the primary lesions and, in combination with radical neck dissections, of neck disease (table 4). The increase in 5-year or even 3-year survivors is not commensurate because of the metastatic aggressiveness of such cancers (fig. 1). Intercurrent disease remains a frequent cause of death, as patients are in the old age group. The control of the primary lesions and of neck disease does, however, change the modality of death to one less distressing.

Reported series of cancers of the uterine cervix treated by primary surgery as well as series of lymphadenectomies alone have established the incidence of positive pelvic wall nodes in stage III cases to be between 60 and 70 per cent. Therefore, in advanced cases of cervical cancer, it is justifiable to use high doses of radiation to the whole pelvis, with subsequent diminished local radium therapy, instead of intensive local radium therapy supplemented by external radiation to the parametria and pelvic wall nodes. The cases treated thus have not yet been followed long enough for final evaluation. Survival rates after 3 years are improved for stage III cases (table 5). Freedom from disease in the vagina and from the intractable pain due to involvement of the sciatic nerves is more systematically obtained.

Results of radical cystectomy are poor in instances of undifferentiated tumors of the urinary bladder with deep infiltration of the muscularis mucosae, with or without perivesicular extension. Conventional radiation therapy is poorly tolerated, as the bladder is, perhaps, the organ where tolerance to treatment with supervoltage, compared with 250 kv. radiation, is most noticeably improved. Tumor doses of 6,000 r in 5 weeks can be delivered when the general condition of the patient is satisfactory and the disease not too extensive. An analysis of results, using the classification of urinary bladder tumors according to grading and degrees of infiltration, shows that worthwhile control of the anaplastic deeply infiltrative tumors is achieved (table 6). This experience is shared by several centers, so that it safely may be stated that supervoltage roentgentherapy has a definite place in management of patients with tumors of the urinary bladder.

There are many clinical circumstances in which supervoltage therapy is of great value, such as in the less common tumors of the vagina and female urethra. Relatively satisfactory results are achieved with conventional therapy in tumors of the nasopharynx, but these lesions are slightly better handled by supervoltage radiation, especially when there are palpable nodes in the neck. In tumors of the extrinsic larynx, success with combined procedures is enhanced.

Increased systemic tolerance affords more sustained comfort during irradiation of periaortic nodes in the treatment of seminoma testis. This is particularly advantageous in heavy patients. When there are large periaortic metastatic nodes, even wide portals over

TABLE 1.—*Supervoltage Roentgentherapy (Cobalt-60 Irradiator and 2-3 Mev) Compared with Conventional Roentgentherapy.*

Advantages	Similarities	Disadvantages
Less skin reaction	No specific action on tumor cells (radiosensitivity unchanged; for instance in cancers of the GI tract, glioma multiformes, etc.)	Need slightly higher tumor dose (10-15%)
Greater depth dose	No difference in differential sensitivity between tumor cells and normal cells	Late fibrosis
Less side scatter and radiant energy in penumbra		
Better organ tolerance	Limitation of deep organ tolerance	
Better systemic tolerance (less radiation sickness, less change in blood count, etc.)		

TABLE 2.—*Supervoltage Roentgentherapy Characteristics.*

Can	Cannot
Improve cure rates	Allow retreatment because of risk of necrosis of inner structures
Allow easier definitive therapy for lasting control	Treat radioresistant cancers
Allow short range palliation with less discomfort	Influence course of generalized cancers

the area do not prevent disease recurrence in the abdomen. Irradiation of the whole abdomen more regularly will secure freedom from disease. Patients with less sensitive tumors, such as embryonal carcinomas of the testis, can be treated more thoroughly with tumor doses of 4,000 to 4,500 r in 4 to 5 weeks.

LASTING CONTROL

There are large groups of cancers in which even extremely radical therapy yields only a small percentage of 5-year survivors because disease is already generalized by the time of diagnosis. Cancers of the esophagus and of the lung belong to this category. Nielsen, using rotation therapy with 180 kv. and fluoroscopic control, has obtained reopening of the lumen in 80 per cent of the patients and 5 per cent 5-year survivors in cancers of the esophagus. Supervoltage roentgentherapy makes possible the utilization of simple stationary portal techniques, but does not necessarily increase cures, and Nielsen's results are yet to be surpassed. With radical surgery similar long-range curative results are obtained. A comparison of surgical and radiotherapeutic series shows that surgical treatment should be preferred in lesions of the lower third and radiotherapy in lesions of the upper and middle thirds of the esophagus.

The curative or even the palliative value of supervoltage roentgentherapy is not superior in bronchogenic carcinomas. Grid therapy with 250 kv. is often indicated. Superior vena cava obstruction from mediastinal nodes (usually oat cell carcinomas) is controlled by tumor doses of 3,000 to 4,000 r, which can be delivered with conventional equipment. Supervoltage therapy is slightly better tolerated, but not strikingly so.

One of the outstanding characteristics of supervoltage roentgentherapy is increased systemic tolerance. Large volumes of the torso, either thorax or abdomen or both, can be irradiated with less marrow depression, anorexia, asthenia, and weight loss. For instance, in ovarian cancers, tumor doses of 3,000 r may be delivered to the entire abdomen in approximately 6 weeks.

Large volume therapy also may be utilized in the treatment of patients with lymphomas, to irradiate prophylactically the surrounding areas. For instance, shielding the larynx and the lungs, both sides of the neck, the axillae, and the mediastinum can be included in one field, and tumor doses of 3,000 r can be administered in 3 to 4 weeks. Tumor doses of 3,000 r or more can be given easily to mediastinal

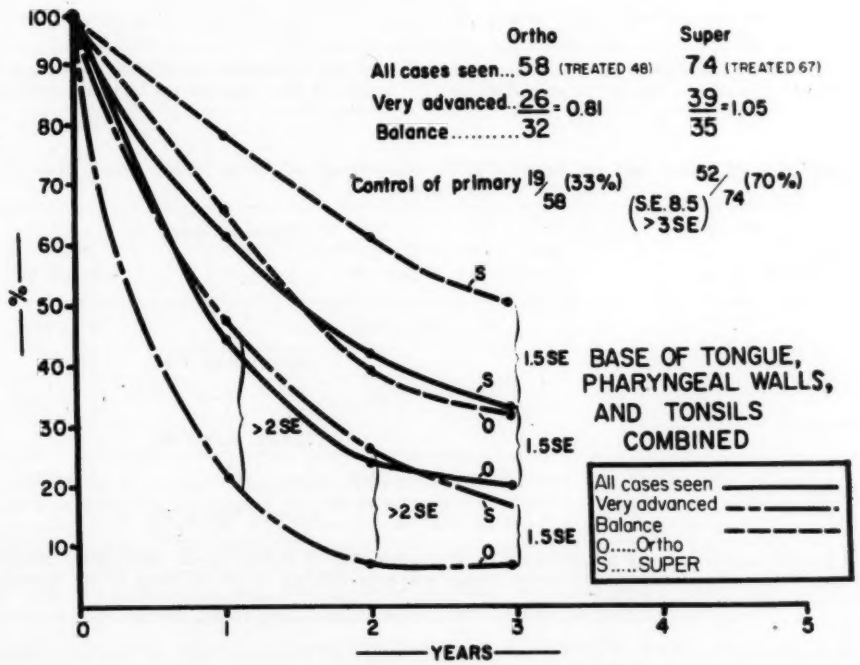

Fig. 1. Comparison of survival rates in cancer of the head and neck area treated by conventional and by supervoltage roentgentherapy. The percentages include all cases registered, and the cases too advanced for treatment are considered as failures, dead at 1 year.

lymphomas with the possibility of achievement of longer remissions. In abdominal lymphomas, the whole abdomen can be irradiated and, in this manner, lasting freedom from disease in that area may be procured.

PAIN RELIEF

It is obvious that bone metastases may be irradiated with supervoltage equipment, but this is usually of no advantage in relief of pain. There are, however, some select circumstances, such as metastases to the bones of the pelvis that have previously been

TABLE 3.—*Distribution of Patients Treated by Supervoltage Roentgentherapy, February, 1954, - June 30, 1958.*

	Co-60	22 Mev Betatron	Combination	Total
Cervix	51	514	19	584
Miscellaneous gyn. (ovary, body of uterus, vagina, other gyn.)	31	62	17	110
Urinary bladder	46	148	8	202
Testes	14	8	10	32
Miscellaneous G.U. (urethra, penis, ureter, prostate, kidney)	5	23	3	31
Head and neck	535	62	57	654
Breast	187	0	0	187
Lymphoma	74	18	3	95
Thorax (lung, esophagus)	17	41	6	64
Miscellaneous (distant metastases, G.I., pancreas, other miscellaneous)	49	53	10	112
Total				2,071

The cases treated by combination are (1) cases transferred from one equipment to the other as a result of change in planning because of new clinical findings or evaluation, or (2) use of 22 mev betatron for localized additional treatment.

TABLE 4.—*Comparison of Orthovoltage and Supervoltage Roentgentherapy of Cancer of the Tonsils, Base of Tongue, and Pharyngeal Walls.*

	Patients Treated	
Primary not controlled	"Ortho" 48	"Super" 67
	30 or 61%	15 or 23%
	(greater than 3 SE)	
Neck not controlled	22 or 45%	15 or 23%
	(greater than 2 SE)	
DM + ID + SP	5 or 10%	16 or 24%
	(greater than 2 SE)	

Both the primary lesions and neck metastases are more common sites of failure in the orthovoltage group. Conversely, distant metastases, second primaries, and intercurrent diseases are more common causes of death in the supervoltage group. The differences are statistically significant.

SE = Standard error
DM = Distant metastases
ID = Intercurrent disease
SP = Second primary

TABLE 5.—*Three Year Survival in Squamous Cell Carcinoma of Cervix Previously Untreated (Excluding Carcinoma of Cervical Stump).*

PRIOR TO SUPERVOLTAGE

	589 Registered Cases			515 Treated Cases		
	Total No. Pts.	No. Pts. Alive	Survival Rate (%) (Absolute)	Total No. Pts.	No. Pts. Alive	Survival Rate (%) (Relative)
Stage I	64	60	94	64	60	94
Stage II	254	195	77	252	195	77
Early*	129	108	84	129	108	84
Late	125	87	70	123	87	71
Stage III	208	77	37	180	77	43
Early†	98	47	48	93	47	50
Late‡	110	30	33	87	30	34
Stage IV	63	3	5	19	3	17
Stage I and Stage II Early	193	168	87	193	168	87

SINCE SUPERVOLTAGE

	414 Registered Cases			363 Treated Cases		
	Total No. Pts.	No. Pts. Alive	Survival Rate (%) (Absolute)	Total No. Pts.	No. Pts. Alive	Survival Rate (%) (Relative)
Stage I	52	48	92	51	48	94
Stage II	124	99	80	121	99	82
Early*	69	60	87	67	60	89
Late	55	39	71	54	39	72
Stage III	183	94	51	171	94	55
Early†	94	58	62	89	58	65
Late‡	89	36	40	82	36	44
Stage IV	55	5	9	20	5	25
Stage I and Stage II Early	121	108	89	118	108	92

The availability of supervoltage, concomitant with occupancy of the permanent hospital, was followed by a marked increase in clinical material. The 589 cases of the first group were accumulated in 6 years, whereas the 414 cases of the second group were accumulated in 28 months. The increase was not in stage I and stage II, but primarily in stage III.

All patients were traced, and patients dead from intercurrent disease are counted as failures. The unchanged survival rates for stage I and stage II cases indicate no change in the practice of staging. The survival rate is significantly increased for stage III cases. The difference for stage IV cases is not statistically significant, because of the small number. The survival rate for all cases is 57% in both groups, reflecting the proportional increase of stage III cases.

*Technically suitable for radical hysterectomy (involvement of upper third of vagina and/or medial aspects of parametria).

†One pelvic wall involved or only lower third of vagina.

‡Frozen pelvis or near frozen pelvis.

irradiated, in which further radiation still can bring about pain relief. With supervoltage the risk of decubitus ulcers is diminished.

MISCELLANEOUS

A definite response to supervoltage roentgentherapy has been reported in patients with rectal cancers because by this means sufficiently high tumor doses can be delivered. A small number of proved recurrences in the hollow of the sacrum after surgery have been treated with, in some cases, worthwhile regressions.

INVESTIGATIONS

There is great controversy as to the place and effectiveness of radiation therapy in the management of patients with breast cancer. The possible uses of radiotherapy vary from postoperative radiation after radical mastectomy to radiation alone in instances of inoperable cancers. At present, most therapists prefer to limit the irradiated area after radical mastectomy for early breast cancers to the supraclavicular region and internal mammary chain nodes which are, besides the axillary nodes, first relays of spread. With conventional voltages approximately 3,500 r in 3 weeks is the maximum tumor dose, since the skin reaction constitutes the limiting factor. No higher tumor dose can be delivered with supervoltage because of excessive doses to deep mediastinal structures and the lung tissues. Attempts to deliver more than 4,000 r in 4 weeks (or equivalent doses in longer periods of time) have resulted in crippling pneumonitis and mediastinitis. Depth doses from the existing hectocurie cobalt-60 units are still too great to allow increased dosages to the node bearing areas, which are 2 to 3 cm. below the skin. In the future, techniques may be designed with short SSD (15 to 20 cm.) cobalt-60 or cesium-137 units to permit higher tumor doses.

TABLE 6.—*Influence of Stage and Grade on Survival of Patients with Urinary Bladder Tumors (Analysis as of 1958 Anniversary Dates).*

		1 Yr.	2 Yr.	3 Yr.	4 Yr.
Superficial:	Low	26/32	17/28	3/13	—
	High	15/16	10/12	3/5	1/2
Deep:	Low	7/13	2/6	1/4	—
	High	33/48	14/34	7/18	2/7
Metastatic:	Low	3/8	1/3	0/2	—
	High	18/46	6/29	2/18	2/12
Totals:	Low	36/53	20/37	4/19	—
	High	66/110	30/75	12/41	5/21

The histologic grade I and grade II are considered low grade and the histologic grade III and grade IV transitional cell carcinomas and undifferentiated carcinomas are considered high grade. For tabulation purposes, stage A and B-1 are grouped together as superficial; B-2 and C together as deep; and D-1 and D-2 together as metastatic. Lesions with palpable extravesical extensions to the pelvic wall are classified D-1.

In each pair of figures the numerator is the number of patients alive and the denominator the number of patients treated.

Table prepared by Lowell S. Miller, M.D., associate radiotherapist, University of Texas M. D. Anderson Hospital and Tumor Institute.

The incidence of chest wall recurrences is high, and there is significant incidence of carcinomatosis of the chest wall in the more extensive tumors that are yet considered clinically and technically resectable. Surgical procedures produce local spread and, possibly, distant metastases by throwing clumps of tumor cells into the circulation. If the tumor cells are damaged to some degree, and therefore less likely to "take," these possibilities are lessened. Because of the negligible delay in wound healing, supervoltage radiation may be used preoperatively. In a group of 50 breast cancers after preoperative radiation, various degrees of radiation damage were found with only 1 exception in specimens from both the breasts and axillae (table 7).

The skin-sparing quality of supervoltage radiation precludes its use, alone, in patients with breast cancers which are considered inoperable by clinical criteria such as Haagensen's, or technically inoperable because of spread to the superficial dermal lymphatics. Therefore, bolus has to be used for at least part of the treatment or, alternately, part of the treatment must be given with conventional voltage to produce an appreciable degree of skin reaction. The severe moist desquamation on the chest wall that occurs after 3 mm. Cu HVL radiation warrants investigation of techniques that produce less skin reaction and still afford good local control.

MEGAVOLTAGE AND ELECTRON BEAM THERAPY

X-ray generators up to 70,000,000 volts have been built for clinical use. Twenty to 35 mev betatrons and 4 mev linear accelerators are the most common. There is no fundamental difference between the 4 mev linear accelerators and the 2,000,000 volt x-ray machines or kilocurie cobalt-60 teletherapy units. The slightly increased depth of electronic build-up may be a disadvantage when lesions are close to the skin. Depth doses of the 20,000,000 volt range

TABLE 7.—*Radiation Effect in 50 Breast Cancers.*

		None	Slight	Moderate to Marked	Nonviable
Residual tumor in breast only	9	0	1	8	0
Residual tumor in axillary nodes only	9	0	3	4	2
Residual tumor in both	7				
Breast	7	0	3	4	0
Axilla	7	1	0	4	2
Total cases with residual tumor (in 25 breasts and/or 25 axillae)	25	1	7	20	4

Fifty consecutive radical mastectomy specimens (preoperative irradiation with cobalt-60 alone or 25% of dose with 250 kv.) were reviewed in an attempt to evaluate the effect of radiation. The clinical diagnosis of carcinoma was substantiated in 49 by preradiation biopsy. In the remaining case, an inflammatory carcinoma irradiated without prior biopsy, residual tumor was found in the amputated breast. Metastatic carcinoma was present in 2 axillary node biopsies done before irradiation. It is interesting that tumor was not found in either of these cases after radiation therapy.

Four arbitrary degrees of radiation damage were established for the purpose of this study: (1) None: no discernible change in tumor cells. (2) Slight: intracellular edema and occasional cytoplasmic vacuoles. (3) Moderate to marked: nuclear swelling or pyknosis, irregularity or clumping of chromatin, extreme granularity and vacuolization of cytoplasm, and loss of cell borders. These changes were most frequently encountered. (4) Nonviable: only cell outlines remained, or the nuclei were fragmented.

Complete removal of the breast tumor constituted the initial biopsy in some of these patients, but the infrequency of residual carcinoma can scarcely be explained on this basis alone. It also should be noted that in most instances the residual tumor recorded was minimal in aggregate volume, and often consisted of only one or two microscopic foci.

Acellular fibrocalcific nodules were found in 4 of the cases recorded as showing no remaining tumor. Whether these represented totally destroyed tumor or were the result of the earlier surgical procedure was felt to be indeterminable. Similar nodules in lymph nodes, found in 2 cases, were reported as nonviable tumor.

In summary, in 100 specimens (50 breasts plus 50 axillary contents) 1 instance only of unaltered cells was found and 7 instances of slight damage. In all other cases (more than 90%) either no tumor was found or markedly damaged cells.

Specimens studied and table prepared by: William O. Russell, M.D., pathologist-in-chief, and H. Stephen Gallager, M.D., assistant pathologist, University of Texas M. D. Anderson Hospital and Tumor Institute.

are much greater than those of the kilocurie cobalt-60 units or 2,000,000 volt machines.

Megavoltage equipment is neither a substitute nor an alternate for supervoltage equipment and should be considered only as complementary. In the deep-seated tumors, primarily those of the pelvis, megavoltage equipment will allow delivery, with excellent tolerance, of high tumor doses with accurate, because simple, geometric patterns.

Electron beams can be produced either by betatrons or linear accelerators and could afford an excellent solution to certain clinical problems, such as inoperable neck nodes and tumors 3 to 5 cm. below the skin like metastatic internal mammary chain nodes. These electron beam generators, however, would not be sufficiently economical for widespread use, even if they were of distinct advantage in specific clinical situation.

SUMMARY

Supervoltage roentgentherapy will be useful from now on in the management of patients with cancer, but it is no panacea and no substitute for clinical experience. The benefits are real, but cannot all be statistically assessed. Its improved curative value is limited to the narrow segment of cancers that are amenable to radiation therapy but which have been poorly controlled locally by conventional therapy. These would include the squamous cell carcinomas of the oropharynx, the deeply infiltrative anaplastic tumors of the urinary bladder, and the late cancers of the cervix.

The integration of radiation and surgical procedures, such as radical neck dissections and radical mastectomies after irradiation, is decidedly improved. Because of the skin-sparing factor, wound healing is less difficult.

The most striking advantage of supervoltage roentgentherapy is the absence of skin reaction. This characteristic, however, necessitates enlarged clinical experience and more careful physical planning, because the therapist is deprived of a traditional warning.

♦ Dr. Fletcher, University of Texas M. D. Anderson Hospital and Tumor Institute, Houston.

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Recent Advances In Psoriasis

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THE PROBLEM of psoriasis is not new. Investigations into the nature of the disease have been carried out since the first description was laid down by Willan[24] in 1801. In the past, most experimentation has been poorly controlled and has resulted in contradictory reports. Clinical investigation is complicated by the fact that in many cases prompt improvement follows treatment with any medication, only to relapse even though the treatment is continued.[18] Results are further confused by the fact that spontaneous remissions frequently occur. There has been much confusion about psoriasis, but in general there is agreement that a disease which shows such characteristic clinical and pathologic changes must be due to a fundamental physiologic abnormality.

More recently, with newer techniques, research in psoriasis has been accelerating at a rapid rate. The purpose of this paper is to review some of the recent investigations and to evaluate them with respect to some of our own clinical studies.

METABOLIC DISTURBANCES

One of the most widely held and generally accepted theories of the past was that psoriasis is a disease of lipid metabolism. Many investigators from the time of Grütz and Bürger[11] have treated psoriasis as a lipid disorder. Lipan, Entozyme, and pancreatic enzyme[4, 5, 14, 22, 23] have been tried, but found by more careful investigators to be no better than placebos.

In our own investigations[19] the serum lipids of patients with psoriasis were studied by ultracentrifugation. No increase in the lipoprotein levels of the standard fractions were found. The mean values for these lipoprotein levels were actually slightly low as compared with the general population. In further studies[20] we were able consistently to lower the lipoprotein and cholesterol levels with diet, heparin, and other medications. There was no correlation with improvement in the psoriasis when the patient received that treatment, pancreatic enzymes, and lipotrophic substances.

Improvement in psoriasis, however, was noted in patients treated with triamcinolone, which consistently raised the value of the lipid fractions. These findings, along with the findings of others,[6, 15] make it highly unlikely that systemic fat metabolism plays any role in psoriasis.

Although no further clues have been uncovered as to the general metabolic defects, much evidence has been accumulating to show that there is abnormal local tissue metabolism. By histochemical methods, Braun-Falco[2] has shown that the psoriatic horny layer is similar to the transitional zone or stratum granulosum of normal skin. They are both rich in phospholipids, fatty acids, and amino acids. Both show increased protein-bound sulfhydryl and increased activity of nonspecific hydrolyzing enzymes, such as esterase, lipase, and phosphatase. He postulated that this indicates an increase in the rate of keratinization. Changes in the dermis, such as greatly dilated capillaries, and increased enzymatic activities, go along with increased metabolism. It cannot be determined histologically, however, whether the changes in the dermis are primary or secondary to changes in the epidermis.

In confirmation that the psoriatic scale is similar in nature to the normal subcorneal layer, Roe[17] has found three proteins by electrophoresis which are present in psoriatic scale and in the normal epidermis. These are not found in the scale of nonpsoriatic exfoliative dermatitis or in callus. The demonstration of these abnormally found proteins may form the basis of a fairly specific, simple test for psoriasis.

Flesch[7, 8] has studied the water soluble fractions of the psoriatic scale and has found consistent abnormalities. The free amino nitrogen is decreased, and there is an increase in the soluble proteins with a high sulfhydryl content. This finding also confirms the rapid rate of horny layer formation in psoriasis. Mercury application causes a disappearance of the sulfhydryl group, which persists for several weeks

Dr. Edward M. Shapiro and his co-author, from the Department of Dermatology, Baylor University College of Medicine, presented this paper for the Texas Dermatological Society April 20, 1959, in San Antonio.

Psoriasis seems to occur with an abnormality in tissue metabolism probably related to accelerated keratin formation. Treatment with Aminopterin and with triamcinolone benefits psoriasis but has side effects and toxic reactions. Grenz ray offers initial improvement. Local treatment still seems best, with a preparation containing 2 per cent allantoin and 5 per cent coal tar giving good results.

after treatment. This finding may explain the beneficial effects which often occur when ammoniated mercury is applied to the psoriatic lesion.

SYSTEMIC TREATMENT

Too often there has been proposed for psoriasis therapy which has been based on uncontrolled or poorly controlled investigations. For the most part, these methods are effective only in the hands of enthusiastic investigators. Recently, several well controlled methods of treatment have been reported which would seem to be worthy of further investigation.

For many years arsenic has been the only systemic medication which would regularly influence the course of psoriasis. Recently two other drugs, Aminopterin and triamcinolone, have been found to alter favorably the course of the disease. Aminopterin is a folic acid antagonist, found by Gubner[10] in 1951 to have an epithelium inhibiting effect. Rees and others[15, 16] have established the dosage and determined the side effects in a definitive manner. Aminopterin was given to 329 individuals according to five dosage schedules. Most of the patients, however, received one 0.5 Gm. tablet per day for 12 consecutive days. Fifty-seven per cent of those treated received a 75 to 100 per cent initial response. Only 18 per cent failed to improve. The recurrence rate, however, was high, with lesions sometimes occurring within a few weeks after discontinuation of the drug. Side effects occurred in 21 per cent of the cases, but most were mild and subsided rapidly on withdrawal of the treatment. The most frequent side reactions consisted of sore mouth or aphthous lesions, intensification, or erosion of lesions in intertriginous areas. Transient hair loss, gastrointestinal upsets, and leukopenia were also seen. It was concluded that while Aminopterin is probably too toxic to be used indiscriminately, it is a highly effective research tool.

Triamcinolone is a recently synthesized corticosteroid which, unlike the other steroids, has been reported to have a specific effect on psoriasis. Hollander and others[13] treated patients with psoriatic arthritis and noted improvement of the psoriatic plaques. Shelley and others[21] and Greenlee[9] noted improvement in nearly all patients with psoriasis who were given triamcinolone in a dosage of at least 16 mg. per day. Lower doses were far less

TABLE 1.—*Triamcinolone in Psoriasis.*

Patient*	Age Sex	Duration of Disease (yr.)	Initial Dosage mg./day	Results	Side Effects	Comments
1	33 F	20	32	Moderate	Moon facies; hirsutism	Relapsed on 8 mg./day.
2	21 F	1	16	Marked	None	On maintenance dose of 8 mg./day.
3	9 F	⅓	16	Marked	None	On maintenance dose of 8 mg./day.
4	38 F	5	16	Marked	Slight moon facies	Flared when reduced to 4 mg./day. On maintenance dose of 6 mg./day.
5	38 F	15	16	Marked	Moon facies; hirsutism; tiredness; burning of stomach	Flared when reduced to 6 mg./day. Discontinued therapy because of side effects.
6	57 F	18	12	Marked	Headache; dizziness; rise in B.P.	Discontinued because of side effects
7	41 F	8	32	Marked	None	Flared when therapy was discontinued. On maintenance of 12 mg./day.
8	51 F	Many	12	Moderate	None	Maintained on 12 mg./day with occasional appearance of lesions.
9	54 M	30	12	Moderate	None	Did not improve until dosage was raised to 16 mg./day. On maintenance dose of 16 mg.
10	46 F	19	16	Marked	None	Medication completely cleared in 3 months. Relapsed 1 month after medication discontinued.
11	30 F	4	16	Marked	GI burning; controlled by Gelusil	Cleared completely, but recurred after 2½ weeks.
12	M	4	16	Marked	None	Maintained on dosage of 12 mg./day.
13	31 F	1	16	Marked	None	Maintained on dosage of 8 mg./day.
14	44 F	Many	4	Marked	None	Improved on prednisolone and now maintained on 4 mg. of triamcinolone.
15	74 M	20	16	Marked	None	Maintained on dosage of 8 mg./day.
16	36 F	18	16	Moderate	Epigastric distress; acne; hair loss; nervousness	Drug stopped because of side effects.
17	33 F	Many	16	Marked	None	Maintenance dosage of 16 to 12 mg./day.

*All patients were white.

effective, although some patients could be maintained on 4 to 8 mg. per day after initial improvement had been obtained. Side reactions were frequent and were similar to those seen with the other cortisone derivatives. Sodium retention and gain in weight, however, were not frequently encountered. Relapse was the rule when medication was discontinued.

In our own series of 17 cases (table 1) 13 patients had an excellent response. This is interpreted as 90 to 100 per cent remission of lesions. In 6 individuals significant side effects were seen. In 3 patients, therapy had to be discontinued because of side reactions. It was gratifying to note that many patients tolerated the medication well. We agree with the other authors that triamcinolone is far from the definitive treatment in psoriasis, but it may be highly useful for some patients who are able to remain clear on relatively low maintenance doses without ill effects for long periods of time.

X-RAY IN PSORIASIS

X-ray has been used favorably in the treatment of psoriasis almost since its inception by Roentgen in 1895; however, it was not until recently that an adequately controlled investigation was reported. Harber[12] divided individual lesions of psoriasis into 3 parts and treated one with Grenz ray, one with conventional roentgen ray, and retained one as a control. He found definitive improvement after 2 or 3 weekly treatments in the irradiated areas over the control site. There was no significant difference between the Grenz ray and the conventional roentgen-ray treated areas. There was also no effect on the immediately adjacent areas, and no evidence of a humoral effect on distant lesions. He also found that radiation did not give prophylactic protection against later appearance of lesions at a previously irradiated site.

Our own investigation of the effect of Grenz ray on psoriasis (table 2) was undertaken for the purpose of determining the duration of improvement and the rate of recurrence. Twenty patients with psoriasis, which had previously been resistant to local treatment, were given Grenz ray according to the method described by Baer.[1] The patients received Grenz ray given at 12 kilovolts and 10 milliamperes with a half value layer of 0.125 mm. of aluminum. Two-hundred r were given at weekly intervals for a total of 800 r at each involved site. No more than this amount was given to any area in a 6 month period.

Our results in this experiment confirmed the findings of Harber in that Grenz ray is effective in psoriasis. All patients in this series showed moderate or marked initial improvement; however, 8 patients out of 18 have relapsed during the follow-up period. With a longer follow-up this relapse rate undoubtedly will be higher, and without further treatment might eventually approach 100 per cent. It is interesting that several patients who have continued ultraviolet or other methods of treatment have maintained their remission for periods up to 13 months. The role of Grenz ray may well be to obtain initial improvement which could be maintained by the continuation of other modalities.

TABLE 2.—*Grenz Ray in Psoriasis.*

Patient*	Age Sex	Areas Treated	No. Treatments	Improvement	Duration of Improvement—Remarks
18	38 F	Elbows, hands, scalp	8	Moderate	6 mo.; all lesions recurred
19	36 F	Right elbow, left thigh	3	Marked	13 mo.; has not recurred
20	66 M	Elbows, knees, scalp, trunk	8	Moderate	1 mo.; some lesions recurred
21	30 F	Back, shoulders, arms, legs	13	Moderate	6 wk.; most of lesions recurred
22	38 F	Arms, legs, chest, axillae	35	Moderate	3-4 mo.; all lesions recurred
23	36 F	Abdomen, back	3	Marked	8 mo.; has not recurred
24	38 F	Arms, legs, scalp, face	8	Marked	6 mo.; has not recurred
25	14 F	Face, scalp, postauricular	4	Marked	12 mo.; has not recurred
26	34 M	Elbows, arm, scalp	7	Marked	Lost to follow-up
27	44 M	Elbows, dorsum of hands	8	Marked	5 mo.; recurred completely
28	36 M	Scalp, face	4	Marked	2 mo.; recurred, generalized
29	26 M	Scalp	4	Marked	8 mo.; recurred completely
30	9 F	Knees, elbows, legs, scalp	4	Marked	2 mo.; has not recurred
31	33 F	Elbows, knees	4	Marked	1 mo.; has not recurred
32	21 F	Scalp	4	Marked	3 mo.; recurred completely
33	43 M	Scalp	3	Moderate	Lost to follow-up
34	10 F	Scalp, arm, legs, trunk	4	Moderate	8 mo.; has not recurred; also using local therapy.
35	7 F	Palms, soles	8	Marked	6 mo.; has not recurred
36	49 M	Scalp, elbows, left knee	4	Moderate	13 mo.; has been using ultraviolet
37	33 F	Elbows, knees, left ankle	4	Marked	12 mo.; no recurrence

*All patients were white.

LOCAL MEDICATION

In spite of the beneficial effects of Grenz ray and the new systemic medications, emphasis must still be on local therapy because of the side effects and possible sequelae. Most reliance still will be placed on the time honored methods of coal tar, ultraviolet, hydration baths, and ammoniated mercury. One new local preparation at this time seems worth mentioning. In well controlled and paired comparison investigations[3] a preparation containing 2 per cent allantoin and 5 per cent coal tar (Alphosyl) gave better results than the control ointment containing ammoniated mercury, salicylic acid, and liquor carbonis detergens. In addition, there is some evidence to suggest that ultraviolet and Grenz ray are potentiated by the prior application of this preparation. Recently a gel containing the same ingredients also has been put on the market (Altara Gel).

The final chapter in the psoriasis story is not written, and the final method of treatment probably will not be found until the elusive etiologic factors are discovered. With the newer scientific advances, however, we are rapidly finding answers that some day will bring relief to the millions of persons who are at present suffering with this distressing condition. Until the cause of psoriasis is found we must continue to treat these patients empirically with the means presently available.

SUMMARY

Advances in the knowledge of psoriasis are occurring at an accelerated rate. The reported metabolic disturbances in regard to blood lipids and pancreatic enzymes have not been found to correlate with psoriasis. Evidence is accumulating that there is a local, but possibly widespread abnormality in tissue metabolism, probably related to accelerated keratin formation.

New systemic treatment in the form of Aminopterin and triamcinolone have been found regularly to benefit psoriasis. With both of these preparations, toxic reactions and side effects preclude the indiscriminate use.

The role of Grenz ray in the treatment of psoriasis has been evaluated with respect to the duration of improvement and the recurrence rate.

A new form of local therapy has been introduced on the basis of paired comparison studies.

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Vegetable Oils Aid Acne Victims

Corn oil, used as a dietary supplement, prevented weight loss and fatigue in three groups of acne patients, Dr. W. R. Hubler, Corpus Christi, reported in the June issue of *Archives of Dermatology*. In addition, the skin of these patients, otherwise on a low-fat diet, seemed to improve more rapidly after addition of the corn oil to their diet. One group were permitted to use unsaturated corn oil oleomargarine without apparent deleterious effects.

Advanced Nursing Fellowships Available

Continuing support for National League for Nursing fellowships is being provided by the Commonwealth Fund. The program provides fellowships for nurses having superior ability and leadership qualities who are engaged in programs of advanced study. During the 5 years of its existence, 126 fellowships have been granted, most of them on the doctoral level.

Diagnosis and Medical Treatment Of Amebiasis

FRANK C. GOLDING, M.D. and GORDON L. BLACK, M.D.

El Paso, Texas

AMEBIASIS signifies the invasion of human tissues by the protozoan parasite Endamoeba histolytica.

The best known manifestation of amebiasis is the acute phase known as amebic dysentery, characterized by diarrhea with blood and mucus, nausea and vomiting, fever, leukocytosis, weakness, and prostration. This is the stage of the disease in which no one should have any difficulty in establishing a diagnosis. However, one should not limit his diagnosis of amebiasis to this phase of the disease.

The second phase of amebiasis is the chronic, nondysentery stage. Here, there may be normal bowel habits, constipation, or diarrhea alternating with constipation. The most important manifestations are fatigue, depression, and malaise, combined with rather vague gastrointestinal symptoms such as anorexia, nausea, gas, belching, abdominal distention and pain, and abdominal tenderness, particularly over the lower right quadrant. This latter manifestation frequently is mistaken for appendicitis. An additional symptom which is not too infrequent in chronic amebiasis is pruritus ani.

Thirdly, there apparently are asymptomatic carriers who, in spite of their freedom from symptoms, are hazards to their contacts and are potential subjects for amebic hepatitis and abscess.

DIAGNOSIS OF AMEBIASIS

How can we hope to diagnose these latter two types of amebiasis?

First, the physician must keep amebiasis in mind as a possibility in all cases presenting digestive complaints. Secondly, the physician must be assured that adequate and suitable specimens of bowel discharge reach the laboratory. Certain substances, such as mineral oil, kaolin, barium, or bismuth, taken before stool specimens are collected make them unsatisfactory for examination, and this circumstance always should be ruled out.

The approved practice at present is to have the patient bring three normally passed stool specimens to the laboratory on consecutive days, followed by a liquid stool obtained after a brisk saline cathartic. This latter specimen should be examined promptly after being expelled by the patient since in liquid specimens trophozoites are to be looked for, and these lose their motility soon after passing from the bowel. Finally, a sigmoidoscopic examination should be done. This may reveal amebic ulcerations in the rectum or lower sigmoid, but more frequently there is mucus, usually blood tinged, which can be aspirated for microscopic study. This is positive for ameba in a high percentage of cases previously undetected by repeated stool examinations. We might add that the method we use for preparing these patients for sigmoidoscopic examination is to use warm water or normal saline enemas repeated until they have two or three passages without any fecal material. It is probable that this stimulates peristalsis and brings the mucus to the lower colon from the cecal area, where amebiasis occurs most frequently, because this mucus is often positive where the rectum and lower sigmoid are entirely healthy in appearance. Therefore, sigmoidoscopic examinations after strong laxatives which would tend to flush out the mucus or after Fleet's Phospho Soda enemas, which are certainly more convenient, would not be so satisfactory.

Amebiasis in the chronic, nondysentery stage or in the nonsymptomatic carrier should be suspected in patients with digestive complaints. Stool examinations and sigmoidoscopy plus roentgen studies may provide the diagnosis. A bland diet plus oral medication such as arsenic may suffice. A variety of drugs are available, and long term treatment with intervals of rest may be necessary.

Rhinehart and Marcus[4] in Oregon indicated that a series of 6 stool examinations at intervals of 2 or more days will show a higher incidence of amebiasis than previous surveys. Instead of the previous 5 to 20 per cent estimated incidence, they found 30 plus per cent of normal persons and nonselected clinic patients and 95 per cent in rheumatoid arthritis cases. This challenging relationship to rheumatoid arthritis is discussed in other references.

Thirdly, one must have a competent trained medical technologist to examine the specimens of bowel discharge. False positive diagnoses of amebiasis based on macrophages are fairly common, and we are convinced that there are many false negative diagnoses. One reason for this weakness is that in all but the larger medical centers stool examinations are relatively few in comparison with the number of examinations of urine and blood, and the opportunity of

Dr. Frank C. Golding and his co-author presented this paper before the Texas Society of Gastroenterologists and Proctologists on April 20, 1958, in Houston.

seeing adequate positive specimens is limited. As a result, there are many otherwise competent technicians unqualified to perform adequate parasitology diagnosis.

As an example of the difficulty in establishing this diagnosis, we would like to review one case of a young woman who had had diarrhea for several months. She had had 2 negative stool examinations before we saw her. We had the routine of 4 stools examined, all of which were negative, and it was only upon the second sigmoidoscopic study that we found ameba in the aspirated mucus. This patient came back a year and a half later with another attack of amebiasis. Again, 4 stool examinations were negative, but the sigmoidoscopic aspirate was positive. In other words, the physician has to work hard to establish this diagnosis at times, and must not be satisfied with a negative report from the laboratory on 1 or 2 stool examinations.

The diagnosis of amebiasis also can be suggested by barium enema roentgen-ray examinations. This sign, which has not been emphasized in the radiological literature, consists of coarsening of the mucosal pattern of the colon seen on the film taken after evacuation of the barium from the colon. This is identified by an increase in distance between the haustral markings and an increase in depth of the haustral markings which we believe is suggestive of edema of the bowel wall.

In a normal colon, one finds a coarser pattern of the mucosa in the ascending colon as compared to the transverse and descending portions. For this reason, we hesitate to suggest amebiasis in finding a coarse mucosal pattern limited to the ascending colon. However, if this change extends over to the transverse colon or descending colon, there may be the possibility of amebiasis. There are, of course, several other changes which can produce the coarse mucosal pattern described, such as tuberculosis, allergy, and early ulcerative colitis. However, in a complete work-up these lesions usually can be excluded.

When the coarse mucosal pattern sign is absent, it should not be considered as evidence against the possibility of amebiasis.

Although the coarse mucosal pattern sign unquestionably is nonspecific, nevertheless, in this area the correlation between this sign and the finding of ameba in the stools is sufficiently satisfactory to warrant further study to exclude amebiasis whenever the sign is found.

Fig. 1. A film, made after evacuation of barium from the colon, showing coarsening of the mucosal pattern of the transverse portion of the colon. Note the increased depth of the haustra and the increased distances between the haustral folds. This patient had symptoms of amebiasis, and amebae were found in the stools.

DRUGS USED IN TREATMENT

The treatment of amebiasis is becoming more of a controversial problem, and one cannot be dogmatic in one's statements.

Treatment should be instituted with instructions for a bland, low residue diet, and excluding alcohol. Emetine hydrochloride given by hypodermic injection should be used in the treatment of intestinal amebiasis only to control the symptoms of dysentery. This drug does not eradicate the infection. When given, it should be done under carefully controlled circumstances. The patient should be at complete bed rest, with daily checks on pulse and blood pressure, and possibly electrocardiogram before each daily dose of emetine is given, and it should be discontinued as soon as the dysentery has been controlled. The usual treatment for the intestinal phase of amebiasis, however, consists of oral medications only. The first and, we believe, the most effective of these is arsenic. The preparations used are carbarsone, milibis, and balarsen (Arthisnol).

The second most common group of drugs used for oral administration are the iodine drugs. Vioform or Chinofon were used extensively until Diodoquin was introduced, and this has become the most popular of the iodine drugs.

The use of antibiotics such as Aureomycin, Terramycin, Bacitracin, Neomycin, and Chloromycetin in the routine treatment of amebiasis is mentioned only to be condemned. First, the more conventional medications are equally, if not more, effective; secondly, the complications of these drugs are frequent and dangerous and can be even fatal; thirdly, there is the risk of establishing an idiosyncrasy to these drugs, thereby depriving the patient in the future of their use in other, perhaps more serious, diseases in which there is no alternative treatment.

These drugs are of value in the treatment of pa-

tients who are unable to tolerate arsenic or iodine preparations or when the amebiasis is associated with other infections such as bacillary dysentery in which these drugs are specific. The one exception to this objection to the use of antibiotics is Fumagillin. This is an antibiotic that apparently has little use except in the treatment of amebiasis.

For completeness, it should be mentioned that Atabrin also has been used in the treatment of the intestinal phase of amebiasis.

The use of sulphonamides or penicillin to combat secondary invaders has been of merit in some cases.

A recent drug, Camoform (Biallyamicol Hydrochloride) (Parke, Davis & Company) is of great value in the treatment of amebiasis. Similar to chloroquine, it is another antimalarial drug and contains no arsenic or iodine. Seventy to 80 per cent of it is absorbed, and 15 per cent of this can be demonstrated in the plasma 3 weeks after it is discontinued. This suggests that the drug is localized largely in the tissues and offers promise that it may prove of value in extraintestinal amebiasis.

On two early reports that we have available, the first[2] showed 85 per cent apparent cures after 7 days of treatment with 0.5 Gm. three times a day. The second report[1] showed 100 per cent apparent cures, but in these cases the treatment with 0.5 Gm. three or four times daily was continued in all cases until evidence of the disease had been eradicated, and in 1 case the treatment was prolonged for 25 days. A more recent report by Ross B. Taylor[6] indicated that larger doses of .750 Gm. should be taken four times a day for 10 days and repeated after a 3 or 4 weeks' interval.

Winthrop is experimenting with another synthetic compound, Win 5047 or Mantomide. This is a relatively nonexpensive drug and contains no arsenic or iodine.

Another durg, glaucarubin, is being used outside the United States for the treatment of amebiasis.

If there are localized lesions in the rectum, Vioform ointment locally has been used two or three times daily. Other forms of local rectal treatment that have been recommended are 6 Gm. of Chiniofon dissolved in 300 cc. of warm water as a retention enema daily for 7 to 8 days; Carbarsone, 2 Gm. dissolved in 200 cc. of 2 per cent sodium bicarbonate solution as retention enema for 5 nights.

Finally, treatment of the hepatic phase of amebiasis must be considered. Even in asymptomatic cases, there is strong presumption that some amebic organisms reach the liver. Therefore, a course of treatment for the hepatic phase should be given, especially as we now have the relatively nontoxic drug Chloroquine (Aralen) for this purpose. The usual custom is to start the Chloroquine at the onset of the amebic treatment. We follow this procedure also if there are any signs of hepatic involvement at the time of the original examination, but otherwise we prefer to wait until 6 or 7 weeks of the intestinal treatment have been completed. Then Chloroquine is given along with the intestinal medication. In this way, there is less opportunity for reinfection of the liver after the Chloroquine has been discontinued. Emetine hydrochloride, grain 1 intramuscularly for 10 days also is used in the treatment of amebic hepatitis or liver abscess.

AIMS OF TREATMENT

What are the aims of treatment?

First, the ideal is to effect a cure, but how often can this be accomplished? Although we seem to cure many cases, there is never entire certainty. If we

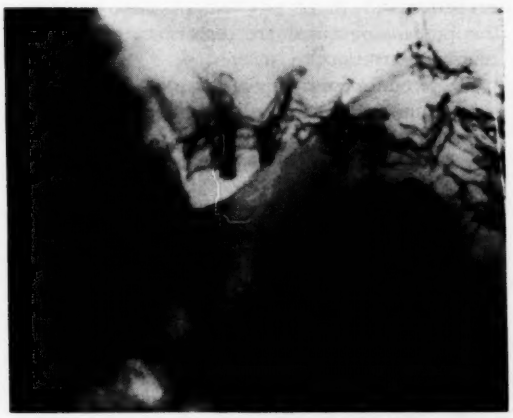

Fig. 2. The coarse mucosal pattern of the transverse portion of the colon. This patient's diagnosis was intestinal allergy, pointing out that the coarse mucosal pattern is not specific for amebiasis.

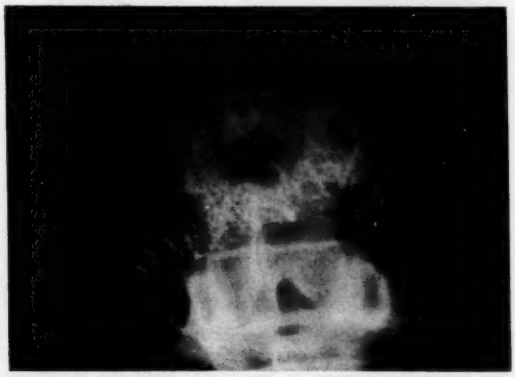

Fig. 3. The normal feathery mucosal pattern of the transverse portion of the colon. It is readily distinguishable from the coarse patterns in figures 1 and 2.

consider how difficult at times it is to demonstrate the parasite in active, untreated cases of dysentery and then compare how minimal would be the possibility of demonstrating parasites in treated cases with a greatly reduced ameba population, the dependence upon negative stool examinations for proof of cure obviously would be inadequate. Because of this difficulty, we have discarded the stool examination after treatment entirely unless symptoms recur. The sigmoidoscopic examination likewise is not very satisfactory for proof of cure since many proven cases show no abnormality originally in the rectum and lower sigmoid. These negative examinations tend to give the physician and patient a false sense of security, and, as a result, they may stop treatment too early.

As to the length of treatment to attempt a cure, the conventional treatment of 1 to 3 weeks, perhaps repeated in a short time, in our opinion is entirely inadequate. We believe continuous treatment should be planned in units of months rather than weeks.

Until recently, we have advised a minimum of 10 weeks, consisting of a week of an arsenic preparation alternating with 10 to 20 days of a nonarsenic-containing drug such as diodoquin, camoform, or Fumagillin to avoid the hazards of accumulation of arsenic in the body. With an increasing number of therapeutic failures accumulating with a larger series of cases, we are now increasing this time to 15 weeks or more.

This continuous treatment is followed by an equal amount of medication on an interrupted schedule with 1 or 2 weeks' rest between each change in medication. After this has been completed, we recommend 3 to 5 weeks of treatment each 6 months for 2 years, then once yearly.

Examples to confirm the need of longer treatment follow.

CASE 1.—A young man whom we saw in July, 1950, had been living in Mexico most of his life. He gave a history of a recent attack of high fever, and when we examined him, he had an elevated diaphragm on the right side. Because of this, we ordered a stool examination, which was positive for Endamoeba histolytica. He was treated continuously for 5 weeks. At this time, a sigmoidoscopic examination was done to rule out tumor since he recently had passed blood in his stools. In spite of continuous treatment for 5 weeks, his rectum and lower sigmoid still had numerous amebic ulcerations. When examined by sigmoidoscope again September 18, 2 months after treatment had been instituted, these ulcers were healed. This patient had no symptoms at any time of disturbed bowel habits, in spite of these ulcerations in his colon.

CASE 2.—Another case seen June 12, 1951, was a referral because of amebiasis. This patient was treated continuously for a period of more than 10 weeks when she went to a large clinic for another complaint. At this clinic, they made complete examinations for evidence of amebiasis, all of which were negative, and they advised her to discontinue the treatment. In a little over a year, this patient again returned with a positive diagnosis of amebiasis, and, after carrying out a more adequate course of treatment, she has had no recurrence.

CASE 3.—A third patient was treated 15 weeks continuously with arsenic and iodine preparations without improvement of his diarrhea. We believed that he must have another cause for the continued diarrhea, but when aspirated mucus was examined, there was no difficulty in finding Endamoeba histolytica. This occurred at the time we were first able to obtain camoform for investigative use, and we started this medication. It controlled his symptoms promptly, and no ameba have been detected since.

CASE 4.—A fourth case was referred to us in February, 1957, by one of the surgeons who had made a diagnosis of amebiasis on this patient. He asked us to treat him for the amebiasis preliminary to hemorrhoidectomy. In spite of continuous treatment for 6 months, in September he still had a positive test for Endamoeba histolytica.

There have been several patients who consulted us after having been diagnosed as having amebiasis by other physicians and treated from 1 to 3 weeks. These patients had been discharged as "cured" by their physicians. Some of these asked us to continue the treatment, as they still had symptoms and they felt that they were not cured, and they have had relief of symptoms with further treatment. Others were treated further by us on our own initiative, because their symptoms still were present, and these were relieved with further treatment.

Now, if continuous treatment for several months does not effect a cure, the chances of doing it with continued treatments are probably slight. However, it seems reasonable that periodic, interrupted treatment offers promise of keeping the chronic infection in a better controlled state with the patient comfortable and probably less a hazard to his contacts. Certainly, it is preferable to having repeated relapses of acute or subacute attacks.

The majority of cases that have relapsed after what we had considered adequate treatment have proven to have colonic diverticuli. We, therefore, have become discouraged about anticipating a cure in cases with this complaint. The diverticuli apparently act as a focus of infection, shut off part of the time from the intestinal amebicide, but later expelling their infected contents into the intestinal lumen and causing reinfection. In these cases, we recommend a less intense but more prolonged interrupted treatment.

Another controversial subject in the treatment of amebiasis is the question of the so-called nonpathogenic ameba—Endamoeba coli, Endolimax nana, Iodamoeba butschlii, and Dientamoeba fragilis. At the University of Pennsylvania,[5] a 5 year study was made of more than 400 patients showing ameba. The investigators made no distinction between the histolytica and the so-called nonpathogenic ameba. They treated these patients with Carbarsone for 10 days, and 44 per cent showed improvement of their digestive complaints. To avoid the criticism that the improvement might be due to the nonspecific tonic effect of arsenic, some patients were treated with

solution of potassium arsenite in therapeutic doses, none of which showed any improvement in their symptoms. Rankin, Bargen, and Buie, in their book "Colon, Rectum and Anus,"[3] stated that amoeba coli and nana should be considered pathogenic when found in patients with gastrointestinal symptoms. With this much evidence, we think it is safer to treat patients who have the so-called nonpathogenic ameba rather than to ignore them.

We treat all so-called nonpathogenic ameba. To date, the majority of these patients have shown clinical improvement. It is possible that this is due to these ameba being pathogenic; also, it is possible that the improvement is because there is an underlying Endamoeba histolytica infection that was not detected at the original examination.

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♦ Dr. Golding and Dr. Black, 1501 Arizona, El Paso.

Nicotinic Acid Reduces Cholesterol

Large doses of nicotinic acid were shown to bring prompt and sustained reduction of blood cholesterol levels in 44 patients with hypercholesteremia, Drs. William B. Parsons, Jr. and John H. Flinn of the Department of Internal Medicine, Jackson Clinic, Madison, Wis., have reported. Their results were displayed in a scientific exhibit at the American Medical Association annual session in June.

Patients were given 3 Gm. of nicotinic acid daily in divided doses for 12 weeks, after which dosage was tailored to meet the response of the individual. Nicotinamide was substituted for a time, and then nicotinic acid with B complex vitamins was resumed. Blood cholesterol returned to pretreatment levels during the substitution of nicotinamide.

January Deadline for Goiter Prize

The American Goiter Association has set January 1, 1960, as the deadline for entry in its Van Meter Prize Award essay competition for 1960. The best unpublished work on some aspect of the thyroid gland in health or disease will receive $300, be given a place on the program at the fourth International Goiter Conference in London, July 5-9, 1960, and permit its author to receive consideration for a travel honorarium.

Entries should be sent to the secretary, Dr. John C. McClintock, 149½ Washington Avenue, Albany 10, N. Y.

Modern Health Care—World's Greatest Bargain

RALPH E. WEBB

Dallas, Texas

THE DRAMATIC CHANGES in health care which have occurred in the last generation are only one aspect of the changing times in which we live; but they are among the most significant in terms of positive human values. For example, in 1957 there was approximately 1 maternal death in 2,300 live births, compared to 1 in 165 in 1915. This is only a statistic; but its deeper meaning is that 25,000 more mothers survived childbirth to give a mother's care to the child who was born and to raise the families they already had, than would have been true if their health care had been that of 1915 standards.

In that period of time the hospital, rather than the home, has become the generally accepted place for babies to be born, and hospital care has made an important contribution to this improvement. In comparison, the recent special problem of staphylococcal infections in the newborn, serious though it may be, seems insignificant indeed. There are, of course, other important contributing factors, such as improved prenatal care and the greater frequency with which expectant mothers seek and obtain it, and even the advent of antibiotics has fulfilled a notable function in making the record as good as it is.

It seems almost superfluous to state that this change—this revolution, almost—in maternal care has increased the over-all cost of health care in this country and has helped to increase the cost of prepaid health insurance as well. Yet what might otherwise seem unnecessary to point out has become a vital concern to all of us, doctors and laymen alike, because the American public today is questioning the so-called high cost of health care and prepaid health insurance; and there are those among us who are turning to government as the only source of answers to the health cost problem.

There is no doubt that the maternal health care of 1915 could be purchased today at much less cost than that required by today's standards, but who would want to turn back the clock in such a fashion? The American public is demanding and getting the best health care available in the world today and will settle for nothing less. What has not been done is to convince the public of what such care costs and

that it is worth all that it costs—is, in fact, one of the greatest bargains that has ever been offered to mankind.

Another facet illustrating the change in health care and its effect on the related human values is a comparison of the problem of orphans. In 1900, more than 25 per cent of the children born in this country faced the prospect of becoming orphans by the time they had reached 18 years of age. Today only about 7 per cent of all infants are likely to become orphans before they reach 18. Most people over 50 can remember losing a sister, brother, or childhood playmate because of one of the contagious diseases; and most parents of today's young children grew up before the advent of the wonder drugs. Rheumatic fever, mastoiditis, pneumonia, and scarlet fever were killers and crippling diseases during the childhood of people who are still in their twenties. Even in the 1930's a ruptured appendix was almost equivalent to a death sentence.

The introduction of the sulfa drugs, the development of antibiotics, and the crash program which resulted in Salk vaccine for poliomyelitis have greatly changed the health picture for infectious diseases in a few short years. Immunizations are available today for children in American families of the most modest means which could not be bought by kings or merchant princes for their children at any price a few years ago. It is easy to take such things for granted, once they have become accepted and are a part of our everyday lives. The extraordinary success of Salk polio vaccine has backfired, in part and in certain areas, in that some people have been lulled into an unwarranted feeling of security and did not even go to the trouble of getting immunization for their children. Here again the results have been dramatic and rewarding, but attained only at considerable cost. Research costs in particular can be tremendous and must somehow be covered. But who would count the costs of saving thousands of children from painful illness, often fatal, or a lifetime to be spent as a cripple? Counted or not, the cost must somehow be paid, and we know the American public will not hesitate to pay the cost if they are aware of its value.

Modern health care in this country is full of other examples of substantial progress in methods of treatment and new equipment, scarcely dreamed of a few years ago. Open heart surgery, made possible by the artificial heart-lung machine, the artificial kidney machine, the use of cobalt therapy and of radioisotopes in diagnosis and treatment, these and many other examples could be cited, each with special jobs to do and each with an increasing record of healthy persons now able to lead normal lives who not long ago would have been fatalities or chronic invalids. Again there is a cost to be paid, and every American, if offered an actual choice, would be willing to pay a fair share of it, for the sake of his family, if not for himself.

Who can say what the future of medicine will hold? The conquest of cancer is coming within range. Increased use of chemotherapy for mental illness looks very hopeful. All we know for sure is that increased knowledge leads to more knowledge, and, whether by accident or design, research pays off in making better health care available. On the horizon there may well be the complete conquest of all infectious diseases, including the common cold, which has so long baffled medical science.

PRICE TAG FOR PROGRESS

Let us all face the fact that for every step of progress there is a price tag attached which we will all pay willingly and with cheers for those who make the progress possible. One of the side effects of such progress is to reduce the death rate from diseases which carried off people after only short illnesses. More and more people are now living to a "ripe old age" when the longer term degenerative diseases begin to have an effect, and care for such conditions can be and usually is, much more expensive. This is one of the main reasons why people over age 65 use three or four times the amount of hospital and doctor care as those who are under age 65. The longer and more costly hospital and doctor care that goes with this change inevitably has been reflected in increased cost for prepaid health insurance, at least for Blue Cross and Blue Shield, which has always permitted continuation of membership to those who reach age 65 without increase in rates or reduction in benefits due to the age factor. Most Blue Cross-Blue Shield plans, in addition, accept group enrollment of persons over age 65, and some plans have special enrollment periods, from time to time, when those over 65 years of age can be enrolled on an individual direct-pay basis. This coverage of older citizens, which

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The dramatic changes in health care that have resulted in saved lives and healthier people have increased health care costs. Because health care involves primarily personal services, automation can do little to reduce cost. Federal medicine is not the answer for lower costs, quality care, medical progress, and continuation of America's great traditions.

has not been offered by most commercial insurance companies, with a few recent exceptions, inevitably has raised the cost of Blue Cross-Blue Shield rates to everyone because of the community-wide rating principles generally followed by these plans.

The increase in physicians' fees in the last 10 or 15 years has not been out of proportion to the increased cost of living generally nor to the increased earning power of most Americans. The really startling increase in health costs has been in the field of increased costs for hospital services. Some of the changes mentioned earlier have contributed to this increased cost, but there have been other changes which make up a greater portion of the increase in hospital costs. Thirty years or so ago, salaries in hospitals constituted about one-third of their operating expenses. Today 65 to 70 per cent of the total operating costs of most hospitals are represented by salaries. Traditionally most hospital jobs have been filled by women, and 20 or 30 years ago hospitals were one of the few places where women could find employment. World War II changed all that radically in that it opened up many job opportunities for women and many of these are still open to women. Consequently, hospitals have had to compete on the labor market on more nearly even terms for help in order to staff their facilities.

In addition, many of the new procedures, new techniques, and new pieces of equipment in the hospital require special training of hospital employees for their proper performance. Open heart surgery is performed only with the assistance of a specially trained and highly skilled team. It costs money to train such people and more money to keep them working for the hospital.

Hospitals are faced with another added cost in what is known as accelerated obsolesence. They must have the best equipment and machines available to perform various functions for their patients' treatment and comfort. Often new and better machines are bought to replace old ones long before the old ones are worn out. Would you or any of your patients have it otherwise? It is a truism that when we or one of our immediate family is sick, we want the best care available, and cost is not a consideration in time of serious illness.

Industry recently has talked much about automation. Actually this is a process that has been going on ever since the industrial revolution started. What has been going on recently is only new and unexpected refinements of the process of doing by machine what was once done by hand. For industry, however, it has made possible great reductions in the cost of production. Hospital care is susceptible to the processes of automation only in a very minor degree. Some office procedures and some food handling and serving services can be improved or reduced in cost in some instances by a degree of automation; but for the most part, hospital services, just like most other health services, are *personal* services that cannot be taken over by a machine. They are literally person-to-person services and will remain so. Thus the door has been closed for hospitals to achieve any substantial savings in their cost of operation by application of the methods which have done so much for industry in this country.

The hospital business in this country is big business. It is the fifth largest business in the country, based on the amount of invested capital involved. Now, however, it has come under public scrutiny as never before. It seems obvious that such scrutiny should be welcomed, but only if it is broad enough in scope so that the whole picture can be viewed. What is distressing to those who are close to the health care picture is that so many of the comments in the public press and elsewhere about health costs concentrate mainly on how high such costs have gone and that there is no ceiling in sight. Labor seems to take the position that someone must impose such a ceiling and that for obvious reasons only the federal government can do so. Labor representatives speak of controlling the rise of hospital costs and health insurance, but they never seem to speak at the same time of controlling rising wages in industry, although the connection seems obvious enough to call for comment.

TRAGEDY OF FEDERAL MEDICINE

Let us assume for a moment that some of the liberal leaders get their way and Congress votes compulsory prepaid health insurance for most of the people in this country. Judging by past experience in England and elsewhere, the cost of such a program is likely to be three times any of the estimates made in preliminary discussions. Doctors would immediately have to start spending 20 to 30 per cent of their time in doing the paper work that goes with such a program. This would be equivalent to the sudden loss of 20,000 doctors to the country, because the amount of time they now spend reporting to voluntary insurance plans is insignificant by comparison. Furthermore, again judging by experience elsewhere, doctors' offices would be crowded, day after day, with patients with minor complaints, the hypochondriacs, or those with nothing better to do, who come in to try the "free" care they have heard so much about. Not only doctors' offices, but hospitals would become overcrowded with such people, so that patients with real health problems would have real trouble getting the necessary care.

Control of hospital costs would come with such a change, but at what ultimate cost to patients? Who

can doubt but that the government would put ceilings on payments to hospitals? A few hospitals with minimum facilities might be overpaid for a while, but the big majority of hospitals would be underpaid by today's standards and something would have to give. Quality of patient care could not help but decline as hospitals fought desperately to meet the quantity of care demanded of them. Little or no funds would be available for purchase of new equipment or development and training for new methods or techniques. There would be, in fact, a "freeze" of health care into its present mold with many of today's more costly, but lifegiving, methods falling by the wayside. The present dynamic nature of health care and the present rate of improvement would slow down, if it did not come to a grinding halt.

The long range effect of such a change would be even more serious. Medicine is probably getting its share of the best minds in the country as present results indicate. This picture, however, would change radically with the advent of socialized medicine. The average net income of doctors in England is stated to be around $6,500 per year. Doctor income in this country would also inevitably be controlled, and some of the present inducements for the best students to go into medicine would suddenly disappear and other fields would seem much more attractive by comparison. The long range results of such a change are impossible to estimate in advance, just as they are not yet fully apparent in England. The decline of the medical profession and of health care in this country would follow as surely as night follows day. Instead of today's bargain in high quality progressive health care, the American public would be paying an outrageous cost for a mediocre kind of health care, acceptable to no one—at least in this country. And make no mistake, every step in the direction of socialized medicine is an irreversible step; there is no turning back, if we are to believe the experience of other countries.

A more serious result of any turn to socialized medicine to answer the problem of the cost of health care would be the gigantic boost this would be for the cause of socialism in this country. If medicine falls to socialism, then a more or less completely socialized economy is only a matter of time and Karl Marx will have been proven right again in recommending socialization of medicine as the big entering wedge for socialism and communism.

This is the real tragedy of the present hullabaloo for a federal program for health care of the aged under the social security system. Those who are advocating it so loudly are either ignorant of the evils that come in its train or working for the cause of socialism in this country in violation of every tradition that has contributed to America's greatness. Who can doubt that the road to socialism is the road to bankruptcy? England's ventures in the realm of socialism have been financed, in part at least, by subsidies from the United States under one name or another; but who or what country would help to finance similar ventures in this country? The answer, of course, is that only the American taxpayer is available for such exploitation; and he is already burdened with the astronomical costs of a cold war that shows no sign of any let-up, as well as the constantly rising cost of government—city, county, state, and federal.

CRITICAL CHOICE

A time of critical choice is at hand. If Congress votes some version of the Forand bill for care of the aged under social security, the point of no return will have been reached and the ultimate and complete control of hospitals and the practice of medicine by the federal government will be only a matter of time. He who pays the piper calls the tune.

The medical profession and the hospitals still have time to tell their story to the American public, if they will do so. An informed American public could not possibly choose government control of health care and give up the high quality of health care available today and also the bright promise of the future. Let us each resolve to do our own share of telling the story to those whom we know or with whom we come in contact, who may finally decide the issue—the voters.

♦ Mr. Webb, Blue Cross-Blue Shield of Texas, 2208 Main Street, Dallas 22.

New Approach for Ligament Repair

An original surgical approach to repair of the avulsion fracture of the tibial attachment of the posterior cruciate ligaments is presented in an article by Lt. Col. John J. Brennan, William Beaumont Army Hospital, El Paso, in the June issue of *Southwestern Medicine.*

Instead of the usual posterior popliteal approach, a medioposterior surgical approach to the posterior of the knee joint is used. This approach plus medial meniscectomy enables the surgeon to visualize the damage and repair the avulsed fracture. Stainless steel wire internally fixes the bony fragment in place.

Millions Earmarked for Health Services

A total of $161,843,030 was raised during the past fiscal year by 10 major national health agencies, the American Association of Fund Raising Counsel has reported. The counsel noted that $276,000,000 additional in tax money is spent in the national budget for promotion of health.

Advantages of Private Medical Care

MARTHA JOBE

Wichita Falls, Texas

ENGLAND'S practice of "socialized medicine" has made America realize the advantages of private care. "Socialized medicine" is no longer a theory but has been tried in several European countries. During this time several changes have occurred in private medical practice. There are many more benefits to the general public, the physician, and the patient. Doctors, nurses, and business men have attempted to inform the American public of the dangers resting in "socialized medicine." Under this form of medical care all individuality would be lost. Ambition would be imprisoned by the endless reports, the legal measures, and the standardization of "socialized medicine."

It is upon freedom of thought and action that the America created by our forefathers has been founded and exists today.[5] It is upon that same freedom that the doctors of years ago created the medical profession and built it into one of the most respected and worthy of all professions. In America, the general thought of all life and development has been the freedom of action—free enterprise. The whole story of medicine in this country is that of an orderly evolution, unrestricted by regimentation or federal interference. The American system of medicine protects the basic liberties so dear to every American. If these liberties are in any way destroyed, modern America will fall! Private care insures freedom. Americans creeping toward socialism do not realize that, yearning to do good and obsessed by the power of the state to do it, they are destroying in the name of social welfare, the very foundations of freedom.[1]

Another benefit to the general public is the sound economy in the present medical system. There is no such thing as "free service!"[6] Someone has to pay for everything the public receives. The financial responsibility of "free service" falls on the general public. Two groups of individuals are considered in discussing the costs of medical service: (1) those able to pay normal costs of care, and (2) those to require assistance in meeting medical bills. For those able to meet bills, the medical profession has devised a positive program: continued promotion of voluntary health service. This provides one of the best methods by which the average American can finance medical and health costs.[4] In Russia, the practice of equal sharing is called communism. In England, it is called socialism. In America, it is called social welfare. In the field of moral law, it is called thievery —taking by force or stealth that which rightfully belongs to another person through requiring him to bear another's burden.

The best benefit to the general public under private care is the better care all receive. The medical profession is dedicated to the betterment of public health. These principles have taken the form of concrete, constructive, programs designed to bring better health to the American people. Medicine prospers in discovery and improvement. Because of new discoveries and research, the average physician's efficiency has increased 30 per cent in the last 15 years.[4] This has come through the use of new drugs and antibiotics, new techniques, modern equipment, and increased help from laboratories. More recently, medicine has harnessed by-products of the atomic age called radioisotopes to kill certain forms of cancer and to trace vital body functions.[4] New methods of treatment have been evolved with drugs from atom-smashing machines. Despite all shortcomings, America has the best health record of any major nation in the world—a result largely attributed to the free development of medical techniques.

ADVANTAGES TO DOCTORS

Doctors receive many benefits under private practice. A physician has more time for diagnosis and prescriptions of adequate medicine for individual patients. Under a government plan, doctors, instead of working for the patient, would be working for the government.[3] If a person becomes ill, the doctor would have to consult government regulations to see if the person was eligible for his help, what approved medicines to prescribe, whether the patient

Miss Martha Jobe, student at Wichita Falls High School, won first place with this paper in the 1959 state contest of the Association of American Physicians and Surgeons.

The rapid growth of medicine and medical techniques is largely attributed to the development of free enterprise. With socialized medicine, ambition would be imprisoned by the endless reports, the legal measures, and the standardization of this form of medical care.

was sick enough to go to the hospital, and whether the hospital could admit the patient. Under this form of medicine, reports have to be filed on all patients —usually three copies. So much time would be spent on reports, there would be less for the patient. The quality of service would go down. Study and research would suffer also. One critic has said, "Under a socialized form, more persons would be under the care of the physician with less under the stethoscope. The doctor's time would be taken up filling out endless forms, with ink on his fingers, instead of iodine."[5]

Perhaps the best advantage under private practice to a physician is the independence he has in his profession. The progress of the medical profession during the last half century has been achieved under a voluntary system which emphasizes free enterprise, individual initiative, responsibility on everyone's part, and cooperative effort.[4] This has been accomplished by doctors, nurses, hospitals, businesses, education, and all segments of American society working together as a unit. This independence, guarded by free enterprise, is the basis of the American system. An example of this independence is found in a country doctor accepting eggs and bacon for payment, using his knowledge in prescribing a medication for a patient, and gaining self-respect as he takes time to help a small child.

PATIENTS' BENEFITS

Patients reap many benefits under private care. They have their personal choice of physician. The medical profession has had the objective of rendering good service at costs the public can afford to pay. There are many factors in the attainment of this goal. One of these is the freedom in the choice of doctors, which has been, and still is, a fundamental principle in medical practice.[2] Medical service cannot be standardized by rule. As patients are diverse in demands and differ in characteristics, their tastes in physicians differ. Under the American system, patients can choose any doctor, therefore exercising a precious and God-given freedom.

During the last 25 years of new discoveries, the most exacting clinical aids have been devised and more accurate diagnoses have been made. Understanding of many medical problems that have remained mysteries for years is now available. It is a matter of equipment, however, that benefits the patient. Through research, more equipment is being used in combating diseases. Better machines, using atomic power, are waging war against cancer cells. This equipment is making the span of life longer than ever before. Within a few decades, vitamins, sulfa drugs, antibiotics, and hormones have been added to the battle against disease.

The rapid growth of medicine and medical techniques is largely attributed to the free development of enterprise. Through the freedom of opportunity and personal liberty America offers her children, the medical profession has risen from one-room hospitals to large centers of research, diagnosis, and treatment. The dreams of the American pioneer doctors are realized today. Many fields have developed due to research and study. This is the freedom our forefathers died for. If socialism is, in any way, allowed to enter our country, these dead shall have died in vain.

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CASE REPORTS

Carcinoma of the Ampulla of Vater

Survival for More Than 5 Years After Pancreatoduodenectomy

ADOLPH KAUFFMANN, M.D.

Fort Worth, Texas

MALIGNANT TUMORS of the periampullary region have all been technically amenable to radical extirpation since Whipple, Parsons, and Mullins first performed a successful two-stage pancreatoduodenectomy for carcinoma of the ampulla of Vater in 1935. A sufficient number of cases have been reported now to indicate that of these tumors, carcinoma of the ampulla of Vater more nearly approaches the ideal for which a radical curative operation may be performed. Such tumors produce obstructive jaundice much sooner than those of the head of the pancreas. The tumors remain localized for a much longer period of time than the other tumors of this region, and metastases occur much later. My interest in this problem has been stimulated not only by my personal experience, but by the meager number of reports of patients surviving more than 5 years.

Dr. Adolph Kauffmann of Fort Worth presented this paper before the Texas Surgical Society, October 6, 1958, in Galveston.

Two cases of carcinoma of the ampulla of Vater are cited, each patient surviving more than 5 years. The author believes carcinoma of the ampulla should be treated by pancreatoduodenectomy. Biopsy and frozen section of lesions of the ampulla of Vater is an accurate and informative procedure.

It is the purpose of this paper to report 2 cases of carcinoma of the ampulla of Vater treated by pancreatoduodenectomy in which the patients have survived more than 5 years, to call attention to the long surviving cases reported in the American literature, and to reemphasize several facts relating to the care of these patients. Since the work of Whipple, Cattell, Orr, Child, Brunschwig, and others has resulted in a standardization of the technique used in the block dissection of the head of the pancreas, duodenum, and distal portion of the common duct, no attempt will be made to discuss this phase of the problem.

CASE REPORTS

CASE 1.—R.H.S., aged 53, was admitted to Harris Hospital on December 31, 1951, with a chief complaint of nausea, vomiting, low grade fever, and jaundice of several days' duration. For the prior 2 months, the patient had noticed several episodes of chills and fever and a sense of "not feeling well." Three weeks before, the patient had an episode of dull pain in the right upper quadrant of the abdomen which lasted several hours and was accompanied by fever, but no nausea. Prior to the onset of icterus the patient had noticed extreme itching. The stools were noted to be light in color and the urine dark orange 1 week previous. There had been no past history of surgery, transfusions, or other illnesses.

Physical examination revealed a well nourished white man with moderate icterus of the sclerae and skin. The cardiorespiratory systems were normal. There was slight tenderness to deep pressure in the right upper quadrant of the abdomen, but no masses were palpated.

Laboratory studies were as follows: On December 31, 1951, the red blood count was 4,700,000 per cubic millimeter, hemoglobin 14.8 Gm., white blood count 7,050 with normal differential; urine positive for urobilinogen; total serum bilirubin 4.5 mg. per 100 cc. with 3.9 mg. per 100 cc. direct; alkaline phosphatase, cholesterol, cephalin flocculation, prothrombin time, and serum proteins normal. On January 3, 1952, total bilirubin was 3.9 mg. per 100 cc. On January 7 the bilirubin level fell to 2.8 mg. per 100 cc., but January 10 it rose again to 4.2 mg. total with 3.3 mg. direct. Roentgenograms of the upper gastrointestinal tract were normal.

Because of the history of recurrent pain and fluctuating type of jaundice with evidence of normal liver function, it was thought that an exploratory laparotomy should be performed. The preoperative diagnosis was common duct stone. On January 15, under general anesthesia the abdomen was explored through a bilateral subcostal transverse incision. The gallbladder, common duct, and pancreas appeared normal, as did the liver. Consequently, the duodenum was reflected medially and opened at the level of the ampulla of Vater. A firm tumor mass measuring 1.5 cm. in diameter was found replacing the ampulla. A portion of the tumor was excised for biopsy. A frozen section revealed adenocarcinoma of the ampulla of Vater. Since no nodes were palpable and the liver appeared normal, a one stage pancreatoduodenectomy, subtotal gastrectomy, and cholecystectomy were performed. The intestinal, biliary, and pancreatic continuity was reestablished using Child's technique.

The choledochojejunostomy was splinted with number 16 catheter brought to the outside through the jejunal

wall. The patient had an uneventful postoperative course until January 24, when he had a sudden onset of rather severe right flank pain with radiation to the right testicle. The abdominal drainage had ceased prior to this. Roentgenograms on January 25 revealed a right pleural effusion and elevation of the right diaphragm. On January 26 a thoracentesis was performed with removal of 500 cc. of bloody fluid. The following day the abdominal wound drained spontaneously and profusely. It was assumed that a subdiaphragmatic collection of fluid had been the etiological factor. By February 3 the patient was completely afebrile and on a general diet with normal gastrointestinal function, so he was dismissed from the hospital.

Pathological findings were grade 1 adenocarcinoma of the ampulla of Vater with invasion of the muscularis of the duodenum (fig. 1). The adjacent lymph nodes were free of metastasis. The pancreas was normal, but the gallbladder contained some chronic inflammatory reaction.

This patient has been followed at frequent intervals and has remained asymptomatic. He has had no dietary restriction and stool studies confirm a normal amount of pancreatic enzymatic activity. He has not required any supplemental pancreatin. A chest roentgenogram and upper gastrointestinal series in June, 1952, revealed no abnormality except that created surgically. The patient was seen on September 15, 1958, and found to be completely asymptomatic with no abnormal physical findings. He has continued with his usual employment since his convalescence.

Figure 2 diagrammatically shows operative procedure used and pathologic condition found.

Fig. 1. Case 1. Pathological findings were grade 1 adenocarcinoma of the ampulla of Vater with invasion of the muscularis of the duodenum.

CASE 2.—Mrs. W. T. B., aged 60, was admitted to Harris Hospital on December 21, 1952. In June 1952, she began to have vague abdominal pains and occasional nausea with some anorexia and nervousness. She was seen by a physician in another city, who performed a total hysterectomy in July. The pathology report was fibrosis uteri.

Following the surgery, the patient continued to have the same symptoms with the pain becoming more severe and predominantly in the epigastrium. By November 17, the nausea and vomiting, anorexia and pain were daily occurrences, causing a weight loss of 20 pounds. A complete gastrointestinal survey done at this time revealed no lesions other than a small diverticulum in the duodenum. In spite of various medications, the patient's symptoms continued. Serum bilirubin on December 13 was 1.39 mg. per 100 cc.

Physical examination revealed a chronically ill woman with a completely normal cardiorespiratory system. The only positive findings were tenderness in the right upper quadrant of the abdomen and a slight icteric tint to the sclerae. Laboratory findings were as follows: red blood count 4,300,000, hemoglobin 13.6 Gm., white blood count 12,200 with 90 per cent polymorphonuclear leukocytes, 9 per cent lymphocytes, and 1 per cent monocytes. Urine contained bile and urobilinogen, cephalin flocculation was negative, serum bilirubin was 2.38 mg. per 100 cc. with 1.86 mg. direct and 0.52 mg. indirect.

Because of the increase in the bilirubin level, it was thought that the patient's symptoms were due probably to a common duct stone or a carcinoma of the ampulla of Vater. She was given several transfusions and vitamin K.

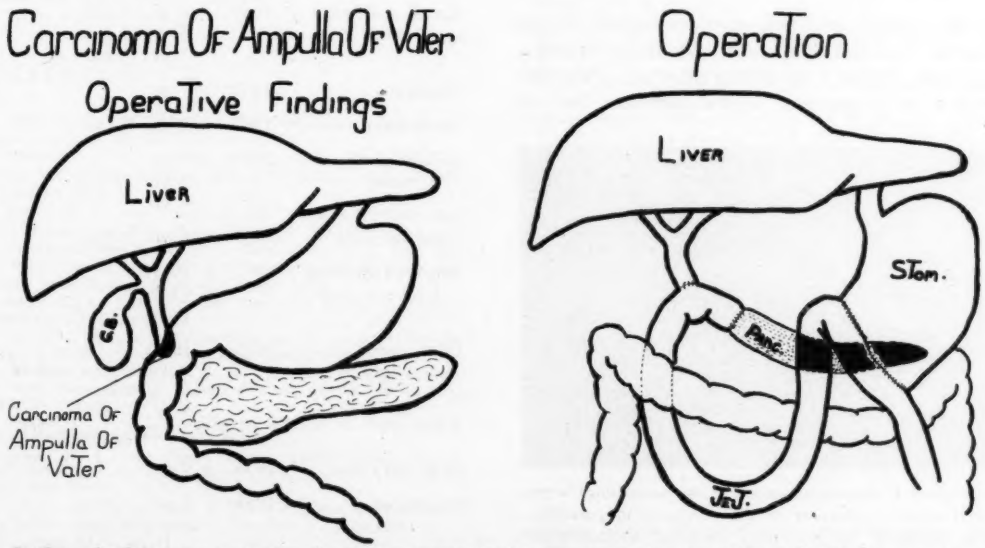

Fig. 2. Case 1. Operating procedure for the pancreatoduodenectomy and the pathologic condition found are shown.

On December 23, an exploratory laparotomy was performed under general anesthesia through a bilateral subcostal incision. The gallbladder was found to be chronically inflamed with adhesions between it and the omentum, but containing no stones. The common duct was dilated and some nodularity was felt in the head of the pancreas. The duodenum was reflected medially and a portion removed from the pancreas for frozen section. The biopsy revealed an inflammatory reaction in otherwise normal pancreatic tissue. The duodenum then was opened and explored. Projected from and involving the ampulla of Vater was a papillomatous lesion measuring 2 cm. in diameter. A portion of the lesion was excised for biopsy. Frozen section revealed an adenocarcinoma of the ampulla of Vater. A pancreatoduodenectomy then was performed, using the same technique as in the previous case.

The patient had an uneventful postoperative course. The only complication was a slightly prolonged drainage from the abdominal wound of a clear fluid resembling pancreatic secretion. The catheter splint was removed on the ninth postoperative day. The serum bilirubin was 1 mg. per 100 cc. and the red blood count 4,600,000. The final pathological diagnosis was the following: (1) Adenocarcinoma of ampulla of Vater grade II without invasion of the surrounding pancreas (fig. 3). Several adjacent lymph nodes revealed inflammation only. (2) Acute and chronic cholecystitis. (3) Focal pancreatitis and fat necrosis.

The patient has been followed closely as an out-patient since that time. She has remained ambulatory, regained her lost weight, and has been asymptomatic except for several bouts of cystitis. Immediately after hospital dismissal, the patient noticed that her stools were fluffy and floated on water. Pancreatin capsules with meals corrected this condition. She has continued taking these intermittently and seems to feel better when she does. She was last seen on August 20, 1958, for a routine follow-up examination. No evidence of neoplastic recurrence or other pathology was noted.

COMMENTS

Table 1 shows the 5 year survivals reported in the literature. The table shows only 19 patients surviving longer than 5 years. I am certain there are others that have not as yet appeared in the literature. Not all long-term survivals have followed radical resections, however. "Koerte performed a local resection which was followed by 22 years survival. Dennis and Varco also report a patient living and well 12 years after a local resection. However, in the same article they cite a second case of local resection where there were no apparent metasteses in which recurrence required radical excision four years later. Although at the time of the second procedure there was no gross evidence of metastases, the patient died seven years later of abdominal carcinomatosis." Louis Nason is an advocate of local resection for ampullary carcinoma and has reported several cases treated in this manner, but none have been followed long enough to be significant. Regardless of the slowness of growth or the grade, these tumors are still malignant neoplasms and should be treated as such. Many authors are in agreement with this principle (Cattell, Dennis and Varco, Orr, Brunschwig, and others) because even following pancreatoduodenectomy only 30 per cent survive 5 years.[5]

Fig. 3. Case 2. Adenocarcinoma of the ampulla of Vater grade II without invasion of the surrounding pancreas. Several adjacent lymph nodes revealed inflammation only.

The most significant factor in the 2 cases presented here was the early exploration allowing for the discovery of lesions young enough to be cured by en bloc resection. Any patient presenting with upper abdominal pain, nausea, and elevated bilirubin level with normal liver function tests should be considered carefully for exploratory surgery.

These cases also illustrate the importance of mobilizing and opening the duodenum in early jaundice.

TABLE 1.—*Longer than 5 Year Survivals after Pancreatoduodenectomy for Carcinoma of Ampulla of Vater.*

Author	Year	Survival
Silver and Zinninger	1948	7 yr. (died of melanoma)
Cattell and Pyrtek (3 cases)	1949	6 yr., 2 mo. 5 yr., 7 mo. 5 yr., 7 mo.
Thompson	1949	7 yr.
Brunschwig	1949	8 yr., 9 mo.
Miller and Clagett (3 cases)	1951	5 yr. 5 yr. 5 yr.
Child and Ellis	1951	5 yr., 3 mo.
Bennett (reporting 3 cases of Hunt)	1952	10 yr. 11 yr. 12 yr.
Dennis and Varco (2 cases)	1955	10 yr., 3 mo. (died apparently of metastases) 9 yr., 7 mo. (living and well)
Swan and Pfister	1956	9 yr.
Kauffmann (2 cases)	1958	5 yr., 9 mo. 6 yr., 8 mo. (living and well)

This is an important diagnostic tool in any upper abdominal exploration. In case 2, I doubt that I would have found the tumor mass without performing a duodenotomy, because the nodularity and thickening in the head of the pancreas made the tumor itself impossible to feel as a definitive mass.

Many authors have condemned biopsy and frozen section of tumors of the head of the pancreas and ampulla, and few have supported its value. However, Spjut and Ramos in review of cases from Barnes Hospital concluded that biopsy with frozen section of the pancreas and ampullary regions is considered to be an accurate, informative, and reasonably safe procedure. Certainly, I would have hesitated to resort to such radical surgery on these 2 patients without a positive diagnosis of carcinoma.

The many postoperative years of fruitful, active life without any disability of these 2 patients illustrates again the feasibility of pancreatoduodenectomy and gives it a permanent place in our surgical armamentarium.

SUMMARY

Two cases of carcinoma of ampulla of Vater with more than 5 years survival have been reported. All of such cases reported in the current literature have been acknowledged. Carcinoma of the ampulla should be treated by pancreatoduodenectomy. Early exploration of cases with jaundice of the obstructive type will improve the cure rate of this disease. Biopsy and frozen section of lesions of the ampulla of Vater is an accurate, informative procedure.

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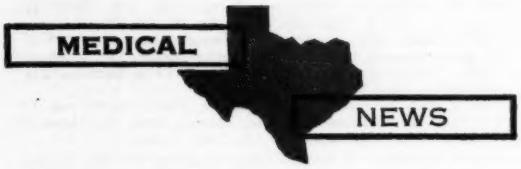


★ Coming Meetings

Texas Medical Association, Fort Worth, April 9-12, 1960 (Executive Board, Sept. 27, 1959). Dr. F. W. Yeager, Corpus Christi, Pres.; Mr. C. Lincoln Williston, 1801 North Lamar Blvd., Austin, Exec. Secy.

American Medical Association, Dallas (Clinical Session), Dec. 1-4, 1959. Dr. Louis M. Orr, Orlando, Fla., Pres.; Dr. F. J. L. Blasingame, 535 North Dearborn, Chicago 10, Exec. Vice-Pres.

Current Meetings

AUGUST

American Congress of Physical Medicine and Rehabilitation, Minneapolis, Aug. 30-Sept. 4, 1959. Dr. Arthur C. Jones, Portland, Ore., Pres.; Dorothea C. Augustin, 30 N. Michigan Ave., Chicago 2, Executive Secy.

American Hospital Association, New York, Aug. 24-27, 1959. Mr. Tol Terrell, San Angelo, Pres.; Dr. Edwin L. Crosby, 810 N. Lake Drive, Executive Director.

North Texas-Southern Oklahoma Fall Clinical Conference, Wichita Falls, Aug. 22, 1959. Dr. Frank J. Lee, 1300 8th, Wichita Falls, Chm.

SEPTEMBER

American Association of Obstetricians and Gynecologists, Hot Springs, Va., Sept. 10-12, 1959. Dr. Joe V. Meigs, Boston, Pres.; Dr. E. Stewart Taylor, University of Colorado School of Medicine, 4200 E. 9th, Denver, Secy. September meeting by invitation only.

American College of Gastroenterology, Los Angeles, Sept. 20-26, 1959. Dr. Frank L. Borrelli, New York, Pres.; Mr. Daniel Weiss, 33 West 60th, New York 23, Executive Director.

American College of Surgeons, Atlantic City, Sept. 28-Oct. 2, 1959. Dr. Newell W. Philpott, Montreal, Pres.; Dr. Michael L. Mason, 40 E. Erie, Chicago 11, Secy.

American Society of Clinical Pathologists, Chicago, Sept. 7-11, 1959. Dr. Edward L. Burns, Toledo, Pres.; Mr. Claude E. Wells, 2052 N. Orleans, Chicago 14, Executive Secy.

International College of Surgeons, U. S. Chapter, Chicago, Sept. 13-17, 1959. Dr. Edward L. Compere, Chicago, Pres.; Dr. Ross T. McIntire, 1516 Lake Shore Dr., Chicago, Executive Director.

Southwest Regional Cancer Conference, Fort Worth, Sept. 20, 1959. Dr. W. S. Lorimer, Jr., Fort Worth, Chm.; Mrs. Ira Frances Ball, 264 W. 11th, Fort Worth, Secy.

Eighth District Society, Victoria, Sept. 19, 1959. Dr. Joseph Magliolo, Dickinson, Pres.; Dr. M. Warren Hardwick, 829 E. Mulberry, Angleton, Secy.

Eleventh District Society, Palestine, Sept. 9, 1959. Dr. Ben Wilson, Tyler, Pres.; Dr. Phillip W. Taylor, 833 S. Beckham, Tyler, Secy.

National and Regional

American Academy of Allergy, Hollywood-by-the-Sea, Fla., Jan. 11-13, 1960. Dr. Francis C. Lowell, Boston, Pres.; Dr. Joseph Noah, 100 N. Euclid Ave., St. Louis 8, Mo., Secy.

American Academy of Dermatology and Syphilology, Chicago, Dec. 5-10, 1959. Dr. A. C. Cipollaro, New York, Pres.; Dr. Robert R. Kierland, Mayo Clinic, Rochester, Minn., Secy.

American Academy of General Practice, Philadelphia, March 19-24, 1960. Dr. Fount Richardson, Fayetteville, Ark., Pres.; Mr. Mac F. Cahal, Volker Blvd. at Brookside, Kansas City 12, Executive Secy.

American Academy of Ophthalmology and Otolaryngology, Chicago, Oct. 11-16, 1959. Dr. John H. Dunnington, New York, Pres.; Dr. W. L. Benedict, 15 Second St. S.W., Rochester, Minn., Secy.

American Academy of Pediatrics, Chicago, Oct. 5-8, 1959. Dr. James C. Overall, Nashville, Pres.; Dr. E. H. Christopherson, 1801 Hinman Ave., Evanston, Ill., Executive Secy.

American Association for Maternal and Infant Health. Dr. M. Edward Davis, Chicago, Pres.; Mrs. Patricia Dorr, 116 S. Michigan Ave., Chicago 3, Executive Director.

American Association for Thoracic Surgery, Miami Beach, May 11-13, 1960. Dr. William E. Adams, Chicago, Pres.; Dr. Hiram T. Langston, 7730 Corondelet Ave., St. Louis 5, Secy.

American Association of Genito-Urinary Surgeons. Dr. John A. Taylor, New York, Pres.; Dr. W. J. Engel, 2020 E. 93rd St., Cleveland 6, Secy.

American Cancer Society, New York, Oct. 28-29, 1959. Dr. Eugene P. Pendergrass, Philadelphia, Pres.; Mr. Granville Whittlesey, 521 West 57th St., New York 19, Secy.

American College of Allergists, Miami Beach, Feb. 28-March 5, 1960. Dr. Cecil M. Kohn, Kansas City, Pres.; Mr. Eloi Bauers, 2160 Rand Tower, Minneapolis, Executive Vice-Pres.

American College of Chest Physicians, Miami Beach, Fla., June 8-12, 1960. Dr. Seymour M. Farber, San Francisco, Pres.; Mr. Murray Kornfeld, 112 E. Chestnut, Chicago 11, Executive Director.

American College of Obstetricians and Gynecologists, Cincinnati, April 3-6, 1960. Dr. John I. Brewer, Chicago, Pres.; Mr. Donald F. Richardson, P. O. Box 749, Chicago 90, Executive Secy.

American College of Physicians, San Francisco, April 4-8, 1960. Dr. Howard P. Lewis, Portland, Ore., Pres.; Mr. E. R. Loveland, 4200 Pine, Philadelphia 4, Secy.

American College of Radiology, New Orleans, Feb. 3-6, 1960. Dr. Lawrence Reynolds, 10 Peterboro, Detroit, Pres.; Mr. W. C. Stronach, 20 N. Wacker Dr., Chicago 6, Executive Director.

American Dermatological Association, Boca Raton, April 8-12, 1960. Dr. J. Lamar Callaway, Durham, N. C., Pres.; Dr. Wiley M. Sams, 25 Southeast 2nd Ave., Miami, Secy.

American Gastroenterological Association, New Orleans, March 31-April 2, 1960. Dr. H. Marvin Pollard, Ann Arbor, Pres.; Dr. Wade Volwiler, Secy., University of Washington School of Medicine, Seattle 5.

American Gynecological Society, Williamsburg, Va., May 30-June 1, 1960. Dr. Karl H. Martzloff, Portland, Pres.; Dr. A. A. Marchetti, 3800 Reservoir Rd. N.W., Washington 7, D. C., Secy.

American Heart Association, Philadelphia, Oct. 26-27, 1959. Dr. Francis L. Chamberlain, San Francisco, Pres.; Mr. William F. McGlone, 44 E. 23rd, New York 10, Secy.

American Laryngological, Rhinological, and Otological Society, Miami Beach, March 15-17, 1960. Dr. Theodore E. Walsh, St. Louis, Pres.; Dr. C. S. Nash, 708 Medical Arts Bldg., Rochester, N. Y., Secy.

American Neurological Association, Boston, June 13-15, 1959. Dr. Derek Denny-Brown, Boston, Pres.; Dr. Melvin D. Yahr, New York Neurological Institute, 710 W. 168th Street, New York 32, Secy.

American Ophthalmological Society, Colorado Springs, May 16-18, 1960. Dr. A. B. Reese, New York, Pres.; Dr. M. C. Wheeler, 30 W. 59th, New York 19, Secy.

American Orthopaedic Association. Dr. C. Leslie Mitchell, Detroit, Pres.; Dr. Lee Ramsay Straub, 535 East 70th St., New York 21, Secy.

American Pediatric Society, Swampscott, Mass., May 5-6, 1960. Dr. Samuel Z. Levine, New York, Pres.; Dr. A. C. McGuinness, Room 1036, 2800 Quebec St., N.W., Washington 8, D. C., Secy.

American Proctologic Society, Houston, April 25-27, 1960. Dr. H. R. Reichman, Salt Lake City, Pres.; Dr. Norman D. Nigro, 10 Peterboro, Detroit 1, Secy.

American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960. Dr. William Malamud, New York, Pres.; Dr. C. H. Hardin Branch, 156 Westminister Ave., Salt Lake City, Secy.

American Public Health Association, Atlantic City, Oct. 19-23, 1959. Dr. Leona Baumgartner, New York, Pres.; Dr. Berwyn F. Mattison, 1790 Broadway, New York 19, Executive Secy.

American Society of Anesthesiologists, Bal Harbour, Fla., Oct. 5-9, 1959. Dr. Daniel C. Moore, Seattle, Pres.; Dr. J. E. Remlinger, Jr., 188 W. Randolph, Chicago 1, Secy.

American Surgical Association, White Sulphur Springs, W. Va., April 3-6, 1960. Dr. Warren H. Cole, Chicago, Pres.; Dr. William Altemeier, Cincinnati General Hospital, Cincinnati 29, Secy.

American Urological Association, Chicago, May 16-19, 1960. Dr. William M. Coppridge, Durham, N. C., Pres.; Mr. William P. Didusch, 1120 N. Charles St., Baltimore 1, Executive Secy.

Association of American Physicians and Surgeons, St. Louis, Sept. 29-Oct. 1, 1960. Dr. Louis Wegryn, Elizabeth, N. J., Pres.; Mr. Harry E. Northam, 185 N. Wabash Ave., Chicago 1, Executive Director.

National Tuberculosis Association, Los Angeles, May 15-20, 1960. Dr. H. McLeod Riggins, New York, Pres.; Mrs. Wallace B. White, 651 Marlborough Rd., Brooklyn, Secy.

Radiological Society of North America, Chicago, Nov. 15-20, 1959. Dr. Lawrence L. Robbins, Boston, Pres.; Dr. Donald S. Childs, 713 E. Genesee, Syracuse 2, N.Y., Secy.

South Central Association of Blood Banks, Albuquerque, March or April, 1960. Dr. John B. Alsever, Phoenix, Pres.; L. Ruth Guy, Ph.D., Room 1101, Stoneleigh Hotel, Dallas, Secy.

Southern Medical Association, Atlanta, Ga., Nov. 16-19, 1959. Dr. Milford O. Rouse, Dallas, Pres.; Mr. V. O. Foster, 2601 Highland Avenue, Birmingham 5, Executive Secy.

Southern Psychiatric Association, Dallas, Oct. 4-6, 1959. Dr. J. L. Knapp, Dallas, Pres.; Dr. Richard Proctor, Winston-Salem, N. C., Secy.

Southern Surgical Association, Hot Springs, Va., Dec. 8-10, 1959. Dr. George C. Finney, Baltimore, Pres.; Dr. John D. Martin, Jr., Emory University, Ga., Secy.

Southwest Allergy Forum, Oklahoma City, April 2-5, 1960. Dr. Johnny A. Blue, Oklahoma City, Pres.; Dr. George L. Winn, Suite 104, Lister Medical Building, 430 Northwest Twelfth St., Oklahoma City, Secy.

Southwestern Medical Association, Roswell, N. Mex., Nov. 5-7, 1959. Dr. A. R. Clauser, Albuquerque, Pres.; Dr. M. D. Thomas, 1501 Arizona St., 12-D, El Paso, Secy.

Southwestern Society of Nuclear Medicine, New Orleans, March 14-15, 1960. Dr. Herbert C. Allen, Jr., Houston, Pres.; Dr. J. R. Maxfield, Jr., 2711 Oak Lawn Avenue, Dallas, Secy.

Southwestern Surgical Congress, Las Vegas, Nev., March 28-31, 1960. Fort Smith, Ark., Dr. Fred H. Krock, Fort Smith, Ark., Pres.; Mary O'Leary, 813 Medical Arts Bldg., Oklahoma City, Exec. Secy.

Tri-State Medical Assembly, Shreveport, La., Oct. 2-3, 1959. Dr. R. B. Langford, Shreveport, Pres.; Dr. J. W. Wilson, Jr., 940 Margaret Place, Shreveport, Secy.

United States-Mexico Border Public Health Association, Hermosillo, Sonora, Mex., April 4-8, 1960. Dr. Adan Mercado Cerada, Ciudad Victoria, Mexico, Pres.; Dr. Jorge Román, 243 United States Court House, El Paso, Secy.

State

Private Clinics and Hospitals Association of Texas, Dallas, December, 1959. Dr. Jack S. Maxfield, Dallas, Pres.; Mr. J. J. George, Philips-Dupre Hospital, Levelland, Executive Secy.

Texas Academy of General Practice, Galveston, Oct. 4-7, 1959. Dr. Charles E. Oswalt, Jr., Fort Stockton, Pres.; Mr. Donald C. Jackson, 1905 N. Lamar, Austin, Executive Secy.

Texas Academy of Internal Medicine, San Antonio, Dec. 4-5, 1959. Dr. Merton M. Minter, San Antonio, Pres.; Dr. Hugo T. Engelhardt, 1216 Main, Houston, Secy. Meetings restricted to members.

Texas Air-Medics Association, Fort Worth, April 9-11, 1960. Dr. W. W. Sumner, Fort Worth, Pres.; Dr. C. F. Miller, P. O. Box 1338, Waco, Secy.

Texas Association for Mental Health, Austin, Feb. 18-20, 1960. Paul Southern, Ph.D., Abilene, Pres.; Mr. John Lane, 2410 San Antonio, Austin, Executive Director.

Texas Association of Obstetricians and Gynecologists, Austin, February, 1960. Dr. Maurice Meynier, Houston, Pres.; Dr. Hugh W. Savage, 815 Fifth Ave., Fort Worth, Secy.

Texas Association of Public Health Physicians, Fort Worth, April 10, 1960. Dr. Fred K. Laurentz, Houston, Pres.; Dr. B. M. Primer, 2708 Rio Grande, Austin, Secy.

Texas Chapter, American College of Chest Physicians, Fort Worth, April 10, 1960. Dr. L. M. Shefts, San Antonio, Pres.; Dr. John W. Middleton, 900 Strand, Galveston, Secy.

Texas Club of Internists. Dr. W. W. Bondurant, Jr., San Antonio, Pres.; Dr. T. Haynes Harvill, Medical Arts Building, Dallas 1, Secy.

Texas Dermatological Society, Fort Worth, April 11, 1960. Dr. Edmund N. Walsh, Fort Worth, Pres.; Dr. D. Shelton Blair, 1609 Medical Arts Building, Dallas, Secy.

Texas Division, American Cancer Society, Austin, Dec., 1959. Dr. John A. Wall, Houston, Pres.; Mr. Curt W. Reimann, 5014 Bull Creek Rd., Austin 3, Executive Director.

Texas Diabetes Association, Fort Worth, April 10, 1960. Dr. Ralph Greenlee, Midland, Pres.; Dr. Warren W. Moorman, 901 W. Leuda, Fort Worth, Secy.

Texas Heart Association, Fort Worth, April 9-10, 1960. Dr. Robert E. Leslie, El Campo, Pres.; Mr. Ernest T. Guy, 404 Jesse H. Jones Library Building, Houston 25, Executive Director.

Texas Hospital Association, Dallas, May 10-12, 1960. Mr. F. S. Walters, Jr., Amarillo, Pres.; Mr. O. Ray Hurst, 2208 Main, Dallas, Executive Director.

Texas Industrial Medical Association, Fort Worth, April 10, 1960. Dr. Max E. Johnson, San Antonio, Pres.; Dr. J. G. Burdick, P. O. Box 472, Pasadena, Secy.

Texas Neuropsychiatric Association, Fort Worth, April 10, 1960. Dr. Hamilton Ford, Galveston, Pres.; Dr. E. Ivan Bruce, 1014 Strand, Galveston, Secy.

Texas Ophthalmological Association, Fort Worth, April 11-12, 1960. Dr. Max Baldridge, Texarkana, Pres.; Dr. James H. Scruggs, 2223 Austin Ave., Waco, Secy.

Texas Orthopedic Association, Fort Worth, April 11, 1960. Dr. David M. Cameron, El Paso, Pres.; Dr. Margaret Watkins, 3503 Fairmount, Dallas, Secy.

Texas Otolaryngological Association, Fort Worth, April 12, 1960. Dr. Herbert H. Harris, Houston, Pres.; Dr. Louis E. Adin, Dallas, Secy.

Texas Pediatric Society, Houston, Oct. 23-24, 1959. Dr. Bruce A. Knickerbocker, Dallas, Pres.; Dr. James N. Walker, 5216 W. Freeway, Fort Worth, Secy.

Texas Physical Medicine and Rehabilitation Society, Fort Worth, April 12, 1960. Dr. Edward M. Krusen, Dallas, Pres.; Dr. Oscar Selke, Medical Professional Building, Houston, Secy.

Texas Proctologic Society, Dallas, February, 1960. Dr. Alvin Baldwin, Dallas, Pres.; Dr. H. Gray Carter, 915 St. Joseph St., Dallas, Secy.

Texas Public Health Association, Galveston, Feb. 22-24, 1960. Mr. Tom Warren, Austin, Pres.; Mr. Joseph N. Murphy, Jr., Box 4012, Austin 51, Executive Secy.

Texas Radiological Society, Houston, January, 1960. Dr. Herman C. Sehested, Fort Worth, Pres.; Dr. R. P. O'Bannon, 1216 Pennsylvania, Fort Worth, Secy.

Texas Rheumatism Association, San Antonio, Dec. 4, 1959. Dr. Warren W. Moorman, Fort Worth, Pres.; Dr. J. Morris Horn, 3707 Gaston, Dallas, Secy.

Texas Society of Anesthesiologists, Fort Worth, April 10, 1960. Dr. David O. Johnson, Austin, Pres.; Dr. M. T. Jenkins, Parkland Hospital, Dallas, Secy.

Texas Society of Athletic Team Physicians, Fort Worth, April 9, 1960. Dr. W. Harry Ledbetter, Wichita Falls, Pres.; Dr. Jack Brannon, 2715 Fannin, Houston, Secy.

Texas Society of Gastroenterologists and Proctologists, Fort Worth, April 10, 1960. Dr. Marcel Patterson, Galveston, Pres.; Dr. A. C. Broders, Jr., Scott and White Clinic, Temple, Secy.

Texas Society on Aging, Dallas, Oct. 16-17, 1959. Mr. Herbert Shore, Dallas, Pres.; Mrs. William B. Ruggles, 3701 Stratford, Dallas, Secy.-Treas.

Texas Society of Ophthalmology and Otolaryngology, Fort Worth, Dec. 4-5, 1959. Dr. James T. Robison, Austin, Pres.; Dr. Edwin G. Grafton, 4319 Oak Lawn, Dallas, Secy.

Texas Society of Pathologists, Inc., Fort Worth, April, 1960. Dr. Jarrett Williams, Abilene, Pres.; Dr. Sylvia Johns, 414 Navarro St., San Antonio, Secy.

Texas Society of Plastic Surgeons, Fort Worth, April 9, 1960. Dr. Willard Schussler, El Paso, Pres.; Dr. Raymond Brauer, 6615 Travis, Houston, Secy.

Texas Surgical Society, Houston, Oct. 4-6, 1959. Dr. Albert Hartman, San Antonio, Pres.; Dr. G. V. Brindley, Jr., Scott and White Clinic, Temple, Secy.

Texas Traumatic Surgical Society, Fort Worth, April 10, 1960. Dr. W. D. Marrs, Fort Worth, Pres.; Dr. W. E. Crump, 1300 8th St., Wichita Falls, Secy.

Texas Tuberculosis Association, Abilene, March, 1960. Mr. Zeb Rike, McAllen, Pres.; Miss Pansy Nichols, P. O. Box 6158, Austin 21, Executive Director.

Texas Urological Society, Waco, January, 1960. Dr. William Heck, San Antonio, Pres.; Dr. Moreton A. Magid, 1525 Colcord Ave., Waco, Secy.

District

First District Society. Dr. H. D. Garrett, El Paso, Pres.; Dr. E. S. Crossett, 1501 Arizona St., El Paso, Secy.

Second District Society, Lamesa. Dr. Oscar E. Rhode, Colorado City, Pres.; Dr. John H. Chinn, Jr., Colorado City, Secy.

Third District Society, Lubbock, 1960. Dr. Grady M. Wallace, Lubbock, Pres.; Dr. H. Fred Johnson, 2308 W. Eighth, Amarillo, Secy.

Fourth District Society, San Angelo, May 16, 1959. Dr. W. L. Smith, San Angelo, Pres.; Dr. S. Braswell Locker, 1501 11th St., Brownwood, Secy.

Fifth and Sixth Districts Society, Corpus Christi, July 8-19, 1960. Dr. John W. Chriss, Pres.; Dr. James Gabbard, 1001 Louisiana, Corpus Christi, Secy.

Seventh District Society. Dr. Robert N. Snider, Austin, Pres.; Dr. Richard Lucas, 502 W. 13, Austin, Secy.

Ninth District Society, Brenham, March 17, 1960. Dr. Haden E. McKay, Humble, Pres.; Dr. Lyman C. Blair, 1212 Rothwell, Houston, Secy.

Tenth District Society, Beaumont, 1959. Dr. Albert L. Delaney, Liberty, Pres.; Dr. Irving M. Richman, 3280 Fannin St., Beaumont, Secy.

Twelfth District Society, Marlin, January 12, 1960. Dr. Paul H. Mitchell, Corsicana, Pres.; Dr. J. M. Brown, Torbett Clinic, Marlin, Secy.

Thirteenth District Society, Fort Worth, Fall, 1959. Dr. Frank S. Browne, Wichita Falls, Pres.; Dr. R. D. Moreton, 1217 W. Cannon, Fort Worth, Secy.

Fifteenth District Society. Dr. Charles Wise, Naples, Pres.; Dr. George Bennett, 402 S. Bolivar, Marshall, Secy.

Clinics

Blackford Memorial Cancer Lectures, Denison, Nov. 3, 1959 (tentative). Dr. R. G. Gerard, 509 S. Mirick, Denison, Chm.

Dallas Southern Clinical Society, Dallas, March 21-23, 1960. Dr. T. Haynes Harvill, Dallas, Pres.; Millard J. Heath, 433 Medical Arts Bldg., Dallas 1, Executive Officer.

International Medical Assembly of Southwest Texas, San Antonio, Jan. 25-27, 1960. Dr. Alvin O. Severance, San Antonio, Pres.; S. E. Cockrell, 202 W. French Place, San Antonio, Exec. Secy.

New Orleans Graduate Medical Assembly, New Orleans, March 7-10, 1960. Dr. Ambrose H. Storck, New Orleans, Pres.; Mrs. Irma B. Sherwood, 430 Tulane Ave., New Orleans 12, Executive Secy.

Oklahoma City Clinical Society Conference, Oklahoma City, Oct. 26-28, 1959. Dr. Ralph A. Smith, Oklahoma City, Pres.; Miss Alma F. O'Donnell, 503 Medical Arts Bldg., Oklahoma City 2, Executive Secy.

Postgraduate Medical Assembly of South Texas, Houston, July 18-20, 1960. Dr. C. Alsworth Calhoun, Houston, Pres.; Mrs. W. H. Dahmi, 412 Jesse H. Jones Library Bldg., Houston 25, Exec. Secy.

Board Examinations

Texas State Board of Examiners in Basic Sciences, Austin, Oct. 12-13, 1960. Henry B. Hardt, Ph.D., Fort Worth, Pres.; Mrs. Betty J. Anderson, Chief Clerk, 303 East Seventh, Austin.

Texas State Board of Medical Examiners, Fort Worth, Dec. 3-5, 1959. Dr. M. H. Crabb, Fort Worth, Secy.; Mrs. Luanna Reddin, 1714 Medical Arts Bldg., Fort Worth, Assistant Secy.

MEDICAL MEETINGS

American Hospital Association To Meet This Month in New York

The American Hospital Association will hold its sixty-first annual meeting in the New York City Coliseum in New York, August 24-27.

Topics to be covered at the large sessions will include "Providing and Financing Health Care for the Aged," "Future of Prepayment Plans for Hospital Care," "Progressive Patient Care," "Governing Board's Responsibility for Medical Care in the Hospital," "Auxiliary and the Hospital Service Story," "Evaluating In-Hospital Volunteer Services," "Hospital School of Nursing Education," and "The Hospital and the Allied Health Professions."

In addition to these events, there will be 36 instructional sessions concerned with specific phases of hospital operation. Approximately 500 exhibits of new equipment and supplies and educational displays will be presented.

Conference on Medical Education To Lure Worldwide Personalities

Pooling of international effort in the great movement toward improved health for all mankind will highlight the second World Conference on Medical Education, which will be held in Chicago, August 29 to September 4.

Medical educators from 50 countries will take part in this meeting, which is being sponsored by the World Medical Association and three other world bodies of medicine—World Health Organization, Council for International Organizations of Medical Sciences, and International Association of Universities.

There will be 125 speakers. An expected crowd of 2,000 persons will attend the conference, including a delegation from Russia. President Eisenhower, who has been interested in the financial problems of medical schools ever since his days at Columbia University, where he helped organize the National Fund for Medical Education, is patron of the conference.

Beaumont Symposium to Feature 6 Out-of-State Speakers

"Current Problems in Surgery and Medicine" will be the topic of the symposium sponsored by the Fifth District Chapter of Texas of the American College of Surgeons, Tenth District Medical Society, Beaumont Academy of Medicine, and Lederle Laboratories on September 19, in Beaumont.

The presentations on the program will be the following: "Medical Evaluation of the Preoperative Surgical Patient," Dr. Michael J. Lepore, Columbia University, New York; "Hysterectomy—When and Why," Dr. M. Edward Davis, Northwestern University, Chicago; "Management of Severe Trauma of the Chest," Dr. Thomas H. Burford, Washington University, St. Louis; "Five Year Follow-Up of Extended Radical Mastectomy," Dr. Jerome A. Urban, Cornell University, New York; "Peripheral Endarterectomy," Dr. Jack A. Cannon, University of California at Los Angeles; "Office Proctology," Dr. Robert Turell, Albert Einstein College of Medicine, New York.

A luncheon and a cocktail party for doctors and their wives has been planned for the evening. Activities for the ladies will be provided during the day. No charge will be made for the meeting.

Shannon Lectureship Program Scheduled for October 3

The third annual Shannon Lectureship in Medicine will be sponsored October 3 by the Electrocardiographic Committee of the Shannon West Texas Memorial Hospital in San Angelo.

Lecturers will be Dr. Wendell M. Stanley, professor of biochemistry and director of the Virus Laboratories, University of California, Berkeley, and Dr. Paul B. Beeson, professor of medicine, Yale University Medical School, New Haven, Conn.

Dr. Beeson will speak on the following subjects during the day: "The Management of Infections with Consideration of the Newer Antibiotics," "Chemotherapeutic Agents and Bacterial Resistance," "Infections of the Urinary Tract with Consideration of Experimental Pyelonephritis," and "Fever of Obscure Origin."

Topics to be covered on the program by Dr. Stanley are "New Knowledge on the Basic Properties of Viruses," "Virus-Cancer Relationships," and "The Medical Sciences in the USSR." A cocktail party and dinner will be held during the evening, at which time the guest speakers will speak.

Members of the Texas Medical Association are invited to attend. Those who would like to obtain a registration blank may do so by writing Dr. F. T. McIntire, Electrocardiographic Committee, Shannon West Texas Memorial Hospital, San Angelo.

Oklahoma City Clinical Conference Sponsors 15 Guest Speakers

The twenty-ninth annual conference of the Oklahoma City Clinical Society will be held October 26-28 in Oklahoma City.

Among the guest speakers will be Dr. Robert H. Barter, Washington, D. C., gynecologist; Dr. John A. Campbell, Indianapolis, radiologist; Dr. William M. Christopherson, Louisville, Ky., pathologist; Dr. George M. Haik, New Orleans, ophthalmologist; Dr. M. Digby Leigh, Los Angeles, anesthesiologist; Dr. Daniel W. Lewis, Philadelphia, internist; Dr. H. Relton McCarroll, St. Louis, orthopedist; and Dr. Robert M. Moore, Galveston, surgeon.

Others include Dr. Roy T. Parker, Durham, N. C., obstetrician; Dr. Frederick C. Robbins, Cleveland, Ohio, pediatrician; Dr. Sam H. Sanders, Memphis, otolaryngologist; Dr. John H. Talbott, Buffalo, N. Y., internist; Dr. Gershom J. Thompson, Rochester, Minn., urologist; Dr. Rupert B. Turnbull, Cleveland, surgeon; Dr. J. Walter Wilson, Los Angeles, dermatologist; and Chester H. Lauck, "Lum," nationally known entertainer, Houston.

The program will be made up of general assemblies, clinical pathological conferences, round-table luncheons, specialty lectures, dinner meetings, and commercial exhibits. A social hour, dinner dance, and banquet will be held. The conference is acceptable for 18 hours' credit under category I by the American Academy of General Practice.

For further information, doctors may write the Executive Secretary, 503 Medical Arts Building, Oklahoma City.

Psychosomatic Medicine Group Plans Meeting in Chicago

The sixth annual meeting of the Academy of Psychosomatic Medicine will be held October 15-17 at the Sheraton-Cleveland Hotel in Cleveland. The meeting will be oriented and directed to fit the needs of nonpsychiatric physicians.

Practical everyday office management of psychosomatic problems and emotional disturbances will be dealt with in formal papers, symposiums, panel discussions, and small study groups.

The meeting is open to all physicians, as well as psychologists, social workers, and nurses. Information may be obtained from Dr. Bertram B. Moss, Suite 1035, 55 East Washington Street, Chicago 2.

Southwest Cancer Conference To Be Held in Fort Worth

Three distinguished out-of-state speakers will be on the program of the one day annual Southwest Regional Cancer Conference to be held Sunday, September 20, at the Fort Worth Academy of Medicine in Fort Worth.

Featured on the program will be Dr. Shields Warren, professor of pathology, Harvard University, Cambridge, Mass.; Dr. Eugene P. Pendergrass, professor of radiology, University of Pennsylvania, Philadelphia; and Dr. Warren Cole, professor of surgery, University of Illinois, Chicago.

The conference will be sponsored by the Tarrant County Medical Society and the Tarrant County Unit of the American Cancer Society.

Symposium to Stress Infant Feeding

Infant feeding with special emphasis on protein, iron, calcium, and phosphorus will be the topic of a symposium sponsored by the American Medical Association's Council on Food and Nutrition on October 27. It will be held at the New York Hospital-Cornell Medical Center in New York.

Further information concerning the symposium may be obtained from the Council on Food and Nutrition, American Medical Association, 535 North Dearborn Street, Chicago 10.

North Texas Clinical Conference Being Held in Wichita Falls

The North Texas-Southern Oklahoma Fall Clinical Conference is being held Saturday, August 22, at the Wichita Falls Country Club in Wichita Falls.

Guest speakers who are participating on the program include Dr. J. Garrott Allen, professor of surgery, University of Chicago, Chicago, speaking on "Carcinoma of the Breast and the Current Status of Its Management"; Dr. Claude H. Millikan, Section of Neurology, Mayo Clinic, Rochester, Minn., "The Current Concept of the Treatment of Strokes"; and Dr. Robert I. Wise, professor and head of the Department of Medicine, Jefferson Medical College, Philadelphia, "The Selection and Use of Antibiotics."

Dr. Gordon Clark of Iowa Park presides over the morning session and Dr. Frank J. Lee, Wichita Falls, over the afternoon session.

A seminar on "Anticoagulants" is being presented at the afternoon session. The guest speakers are serving on the panel with Dr. Preston McCall, Wichita Falls, moderator.

College of Surgeons to Atlantic City

Surgical developments will be demonstrated through a wide variety of programs including postgraduate courses, panel discussions, symposiums, research reports, motion pictures, color closed-circuit telecasts, cine clinics, and scientific and industrial exhibits when the American College of Surgeons holds its annual clinical congress September 28-October 2 in Atlantic City.

Dr. Dean Rusk, president of the Rockefeller Foundation; Dr. Owen H. Wangensteen, Minneapolis, incoming president of the college; Dr. R. Arnold Griswold, Louisville; and Dr. David Paton Cuthbertson, Bucksburn, Scotland, will give major addresses.

Thirty-six students from as many medical schools will attend the congress as guests of the college. Colleges sending representatives are rotated each year, and students are selected by vote of their classmates.

Regional Meeting of Obstetricians Set

One of eight district meetings scheduled for fall by the American College of Obstetricians and Gynecologists will be held September 18-19 in St. Louis. Texas, Alabama, Arkansas, Kansas, Louisiana, Mississippi, Missouri, Oklahoma, Tennessee, and the Canal Zone comprise District 7, of which Dr. Buford Word, 2205 Highland Avenue, Birmingham, Ala., is chairman. Additional information may be obtained from Dr. Word.

Ultrasonics Meeting Planned

The American Institute of Ultrasonics in Medicine will meet September 2 in Minneapolis. Dr. Russell Meyers, professor of surgery and chairman of the Division of Neurosurgery at the State University of Iowa Hospitals and College of Medicine, has been scheduled for a luncheon address on "The Potentials of Ultrasonics in General Surgery and Surgical Specialties." Dr. John H. Aldes, secretary, 4833 Fountain Avenue, Los Angeles 29, can give further information.

International Surgeons Schedule Meetings

The annual congress of the North American Federation, International College of Surgeons, will be held September 13-17 in the Palmer House, Chicago. The mid-Atlantic meeting of the college will be held November 16-18 at the Homestead Hotel, Hot Springs, Va.

MEDICOLEGAL NOTES

Safeguards Given For Use of New Drugs

Guidance in the use of the "new drugs" which have been released for the purpose of clinical investigation but not, as yet, released for sale by prescription to the general public has been requested. Advice also is asked by many who are using drugs already released and well-known but the usefulness of which in certain diseases has not been established. I would like, for the benefit of the doctor and his patient, to set forth a few statements to keep in mind as well as safeguards to follow.

As every physician has heard on many occasions, it is his duty to keep abreast of advancements made by his profession. It also is his duty to refrain from trying experiments on his patients and incumbent on him to conform to the mode established by the profession for the treatment of given conditions. And, as the legal saying goes, "if he departs therefrom, he does so at his peril."

It is, therefore, conceivable that injury resulting from the use of these new drugs could fall within the experimentation field. Ordinarily, a physician is not held liable for experimentation except where the treatment was completely without sanction of medical science. In the case of drugs before they are released by the manufacturer, they, naturally, have been subjected to numerous tests so it cannot be said that they completely lack sanction of medical science.

Without going into the area of the manufacturer's and/or seller's liability for harm done by a product, I would like merely to mention a New Jersey case last year which resulted in a $56,000 award to the plaintiff for deafness and tinnitus. Accompanying the drug (neomycin) was the manufacturer's brochure which warned that under certain conditions "the benefits that may be derived . . . should be weighed against the possible development of deafness." The brochure also warned as to dosage and length of time, all of which apparently were disregarded by the physician, and deafness resulted. Although there is authority it may be admissible in evidence, a drug manufacturer's brochure cannot, of course, establish as a matter of law the standard of care required of a physician in use of the drug. However, it is prima facie proof of a proper method of use given by the maker, who must be presumed qualified to give directions for its use and warnings of any danger inherent therein.

Also, physicians should bear in mind that if the new drug is used in a radically different manner than recommended or if the drug itself is unique, there is some danger of liability to the physician unless he can show that the use being made of the drug and the manner in which used are within accepted standards of clinical investigation. A Florida physician was sued by a patient on the basis that the manner in which he was using a certain preparation was radically different from any use that had been made previously of the preparation. It was intimated in this case that a patient might well have a cause of action against a physician under such circumstances.

Here are some suggested safeguards:

1. A physician should know the drug he is using, the recommendations of the manufacturer, as well as those of his colleagues.

2. A physician should be aware of the risks he is assuming if the drug is used in a radically different manner than recommended.

3. Whether the drug is given orally or by injection, the physician is required to exercise the same standard of care and skill as he exercises in other phases of his medical practice. He is aware of the many cases involving nerve and vein injuries as a result of hypodermic injections. If the drug is taken orally, he should give written, detailed instructions, keeping a copy for his patient's file.

4. The physician should have a definite and thorough understanding with his patient as to what type of treatment is contemplated. It should be explained carefully to the patient that the drug is new and there is some danger present.

5. Once the use of the drug is thoroughly understood by the patient, and/or his family, there must be consent upon the patient's part. Even with this consent, there is still a possibility that should injury result the suit might be brought on the basis of experimentation. However, the effect of such consent on the patient's part certainly gives the physician some defense as it can then be said that the patient has assumed the risk of injury. This consent form need not be elaborate, but a simple one such as the following would suffice:

Date_____

I, _____, hereby request and authorize Dr._____ and whomever he may designate to assist him to administer such drugs and treatment to_____,
(name of patient or me)
and to continue such treatment and administration of drugs from time to time, and such other treatment as he may deem advisable.

The effect and nature of this treatment has been fully explained to me, as well as the possibility of injury. Notwithstanding the fact that there are risks of injury inherent in this treatment, I voluntarily accept the risk involved.

No assurance has been made by anyone with respect to the results that may be obtained.

_____
(signature of patient if an adult)

_____
(signature of parent if patient is a minor)

Witnesses:

_____

_____

6. After the consent of the patient is obtained, time will be wisely spent and the patient's health will be protected if the physician makes sure that his patient is not allergic or sensitive to the drug he is contemplating using. (This issue entered into the New Jersey case previously mentioned, in which no test was made.) The doctor should ask his patient questions and make tests. There is a possibility that should injury result, this attention on the part of the physician to the possibility of sensitivity of the patient could be held to be necessary in the exercising of ordinary care.

7. Of course, physicians should make no warranty or contract with the patient as to expected results.

—PHILIP R. OVERTON, LL.B., Austin.

Forand Bill Action Deferred Until 1960 Congress Meets

The House of Representatives Ways and Means Committee voted to defer the Forand bill (H. B. 4700) until the 1960 Congress after a 5 day hearing on the bill.

In an appearance before the committee to discuss the views of the Texas Medical Association concerning the Forand bill, Dr. Milford O. Rouse of Dallas commented:

> In a state steeped in the traditions of individual liberty and initiative, the Texas Medical Association feels that the voluntary private approach should continue to be utilized to provide hospital and surgical benefits for older persons.

Dr. Rouse told the committee that the Association is fully engaged in a multiphased program which is designed to alleviate many existing problems related to medical and surgical services for the aged. The Association's Committee on Voluntary Health Insurance asked Blue Cross-Blue Shield of Texas to undertake a fact-finding survey related to all aspects of medical care for the aged. With these facts on hand, the committee will formulate a realistic plan of coverage for the aged—a plan designed to fulfill those needs which are brought out in the survey. Such a plan will be introduced in October.

Several of the following other positive programs of the Association were mentioned to the Ways and Means Committee. The Association's Committee on Aging presently is completing an intensive educational and informational program among the profession. The committee, in cooperation with the American Medical Association, conducted a successful regional conference on aging in Dallas. Another state conference is in the planning stage, and likely will be presented at the Association's annual meeting in April.

In addition to its independent activities, the Texas Medical Association is cooperating with many other state organizations which hold the primary responsibility for health services. This past spring the Association joined with the Texas Hospital Association, the Texas Dental Association, and the Texas Association of Nursing Home Operators to form the Texas Joint Council to Improve the Health Care of the Aged.

Dr. Rouse told the committee that the Association believes the Forand bill is unwise and not needed. He commented that the Association believes that private, individual care is greatly superior and far less expensive than government medicine. He asked the legislators to reject the bill and endorse the philosophy of free enterprise which has given the United States the highest quality of medical care in the world today.

Another piece of legislation on the national level in which the medical profession is interested currently is a bill (S. 2162) establishing a voluntary contributory health insurance program for federal employees. Approximately 2,000,000 civil service workers and their 3,000,000 dependents would be eligible for hospital, surgical, and obstetrical benefits and would be entitled to medical services in the hospital, outpatient and ambulatory care, and coverage for catastrophic illnesses. Premiums would be shared on an equal basis by employee and government. The Senate has approved this bill, and passage by the House of Representatives was expected when this Journal went to press.

Hearings on the Keogh-Simpson bill to permit self-employed persons tax deductions on funds set aside for retirement were expected to draw a delegation from Texas, but action on the measure, repeatedly approved by the medical profession, was not anticipated before 1960.

IRS Loses Tax Decision Affecting Group Clinics

Internal Revenue Service first lost its fight to deny pension plan privileges to medical partnerships (U. S. vs. Arthur Kintner, M.D., WRMS Nos. 450 and 541). Now it has suffered another loss in a similar case. In Dallas recently, Federal Judge T. Whitfield Davidson ruled that physician members of an association established to operate a clinic are taxable as though the unit were a corporation.

Partners will not have to pay income tax on undistributed profits as individuals; these will be taxed, rather, as corporate profits as a result of the decision in the Southwest Clinic Association case. It is interesting to note that after the Kintner decision, IRS has not yet decided upon criteria of a medical association, for tax purposes.

Specific Compensation Outlined In Workmen's Compensation Law

"Specific injuries" have a distinct meaning in the Texas workmen's compensation insurance law, the Committee on Workmen's Compensation Insurance of the Texas Medical Association points out.

Specific compensation, section 12 of the law, refers to injuries to specifically enumerated anatomical members and sensory functions resulting in permanent impairment to them.

These members and functions are as follows: thumb, fingers, second or distal phalange of thumb, third or terminal phalange of any finger, more than middle and distal phalange of any finger, metacarpal bone and arm at or above the elbow, toes other than the great toe, great toe, foot, leg at or above the knee, sight of one eye, hearing in both ears, eye and leg above the knee, eye and arm above the elbow, eye and a hand, eye and a foot.

The law provides that permanent loss of use shall be considered equivalent to loss of that member. The permanent impairment is related to the smallest portion of the enumerated member when the injury is confined to such portion enumerated of such member.

The new law makes no changes of medical significance regarding specific injuries. The physician is still required as in the past to estimate percentage-wise the degree of functional impairment to the portion of the member, the member, or sensory function enumerated in the law. The law suggests no method of arriving at these estimates.

Thus, it is apparent that "specific injuries" can concern only injuries confined to the members and functions listed and cannot refer to "general injuries" (body as a whole). It is important to keep this distinction in mind, the committee emphasizes.

Course on Mentally Disabled Offered

A course entitled "The Mentally Disabled and the Law" is being offered at the Law-Medicine Center of Western Reserve University in Cleveland, Ohio, beginning September 15 for 15 weeks.

It is designed for lawyers, doctors, social workers, law enforcement officers, public officials, and others interested in the mentally ill. The sessions, scheduled through January 18, will be held on the Western Reserve University campus. For further information, doctors may contact Oliver Schroeder, Jr., Law-Medicine Center, Western Reserve University, Cleveland 6, Ohio.

EDUCATION

March of Dimes Funds Finance Fellowship Program

More than $1,000,000 in March of Dimes funds for education in the health professions, including an appropriation for a new fellowship program to give doctors more extensive clinical training in the fields of rheumatology and birth defects, has been announced by the National Foundation.

The combined sum of the awards is more than $3,500,000, according to Basil O'Connor, president of the National Foundation. These totals bring the total amount channeled into education for the health's professions to almost $32,000,000. Included in this sum are funds for a health scholarship program initiated earlier this year to provide 4 year college training for young Americans in 5 of the health fields—medicine, nursing, physical therapy, medical social work, and occupational therapy.

The fellowship program is open to residents or practicing physicians for study in rheumatology or in the treatment of patients suffering from birth defects of the central nervous system. Fellowships will be awarded for a minimum period of 1 year but are subject to renewal. Stipends will range from $3,600 to $7,000 a year.

More than $900,000 of the educational grants will go to universities, institutions, and professional associations to support the teaching and recruitment programs by which these groups are able to raise the standards of education and medical care throughout the nation.

Two Doctors Receive Mental Health Grants

Two Texas doctors have been given in-service grants by the Southern Regional Education Board for the purpose of enabling staff members of mental hospitals or training schools in the South to observe new or unusual programs in other hospitals in the country.

These doctors are Dr. David T. Wells, Austin, alcoholic counselor, Austin State Hospital, and Dr. James H. Kreimeyer, Rusk, staff physician, Rusk State Hospital.

Applications for these grants, which are made possible by a $90,000 grant for this purpose by the National Institute of Mental Health, still are being accepted by the Southern Regional Education Board. There is no deadline. Persons interested may write to the board at 130 Sixth Street, N. W., Atlanta 13, Ga.

Physicians Receive Heart Grants

Three Texas physicians have been awarded grants for heart research by the Life Insurance Medical Research Fund recently. They are Dr. Howard G. Swann and Dr. James V. Warren, Galveston, University of Texas Medical Branch, and Dr. John C. Porter, Dallas, University of Texas Southwestern Medical School.

Dr. Swann, who received $16,500, will do research on functional distention of the kidney. Dr. Warren will do research on factors influencing cardiac output in man with his $19,800 grant. Dr. Porter plans to study the hypothalamic control of sodium excretion; he received $21,560.

Postgraduate Courses

Radiological Health, New York, October.—Two different courses in radiological health will be presented by the Department of Industrial Medicine at the New York University Bellevue Medical Center Post-Graduate Medical School. "Introduction to Radiological Health" will be conducted October 12-23 for persons having responsibilities connected with the health and safety of personnel in installations using sources of ionizing radiation. "Radiological Health Laboratory" will be given October 26 to November 6. It will be a series of experiments designed to furnish a familiarity with the most important categories of nuclear detection apparatus and techniques of measurement.

Further information may be obtained by writing the Associate Dean, New York University Post-Graduate Medical School, 550 First Avenue, New York 16.

Clinical Cardiopulmonary Physiology, Chicago, October 5-9.—The Council on Postgraduate Medical Education of the American College of Chest Physicians will present a course on clinical cardiopulmonary physiology October 5-9 at the Edgewater Beach Hotel in Chicago. The course will offer recent advances in the diagnosis and treatment of chest diseases—medical and surgical. Tuition for each course is $100 including round-table luncheon discussions. Those desiring more information may write to the Executive Director, American College of Chest Physicians, 112 East Chestnut Street, Chicago 11.

Electrocardiography, New York, November 9-14.—A full time, 5 day course will be given dealing with modern electrocardiography and stressing the basic electrophysiology of the heart rather than the pattern diagnosis. It is suitable for both elementary and advanced students. Doctors may write for further information to Associate Dean, NYU Post-Graduate Medical School, 550 First Avenue, New York 16.

Medical Technology Degree Ready at UT

A new program leading to the degree of bachelor of science in medical technology has begun at the University of Texas in Austin. Approved by the Texas Commission on Higher Education, the program will permit a student to earn a degree within the usual 4 year period and at the same time complete training required for certification by the Registry of Medical Technologists, O. B. Williams, Ph.D., chairman of the Department of Bacteriology, points out. During his senior year, a student will intern at an approved medical laboratory.

The new degree program involves no new courses, only a new arrangement of courses.

Texas Medical Center Expands Facilities and Program

Half a dozen units now under construction or planned for the near future in the Texas Medical Center, Houston, have been reported by the executive director of the center, Frederick C. Elliott, D.D.S.

The Houston Speech and Hearing Center will occupy a $750,000 building in the near future. Research and service activities as well as teaching facilities will be housed in the building now under construction.

A Commons Building which will provide permanent residence for persons employed in the medical center and temporary housing for students and ambulatory patients is contemplated by the Good Samaritan Club, a public trust corporation founded to provide scholarships to students in nursing and for other educational and research programs in the medical center.

Preliminary plans are being developed by architects for the Houston State Psychiatric Institute for which the Texas Legislature has made available approximately $2,000,000. This will be primarily a training and research center for the Texas state hospital system and is due for completion by the latter part of the year.

A building for the Institute of Religion is scheduled to get under way momentarily. This nondenominational institute, now housed in temporary facilities, conducts a program of graduate education in pastoral care especially for those who wish to become hospital chaplains.

Three buildings joining each other will be erected at a total cost of $4,500,000 by the medical center for the use of the Baylor University College of Medicine. To be known as the Jesse H. Jones Clinical Research Building, Anderson Basic Research Building, and Jewish Medical Research Institute, they will provide facilities for an expanded research program.

The Lutheran Hospital Association is expected to build a 250 bed teaching hospital at a cost of $7,500,000 soon.

Study is being given to a Cardiovascular Institute where basic research on diseases of the cardiovascular system may be carried on and to an Institute of Life Chemistry where basic research in the chemistry of living matter may be developed. A highly specialized Institute in the Chemistry of the Endocrine System also is being considered.

Although not involving buildings at this time, the Texas Woman's University is expanding its College of Nursing, centered at the main university in Denton, to include not only Dallas, where some training is carried on now, but also Houston, where the clinical facilities of the Texas Medical Center will be used. The expansion into Houston will permit a doubling of enrollment in the Texas Woman's University nursing program, already the largest college of nursing in Texas.

Grants Given by Smith Kline and French

A total of $24,200 in grants went to Texas institutions and charities from the Smith Kline and French Foundation during 1957 and 1958, reported the trustees of the organization.

Among these were Baylor University College of Medicine in Houston; Community Chest of Greater Dallas, Inc., in Dallas; Methodist Hospital in Houston; United Fund and Community Chest of Houston and Harris County in Houston; and the University of Texas in Austin.

Anticancer Drug Research to Be Told

A conference on clinical anticancer drug research will be held in Washington, D. C., November 11-12 under auspices of the Cancer Chemotherapy National Service Center of the United States Public Health Service. Approximately 1,000 physicians and scientists are expected to hear the clinical research being carried out as part of the center's program and also other phases of the chemotherapy program such as screening for anticancer activity, synthesis and pharmacology of potential anticancer agents, radiation and surgery as adjuvants to chemotherapy, and anticancer drug research abroad.

OF GENERAL INTEREST

Personals

Dr. William J. Campbell of Amarillo was recently awarded a plaque in recognition of his "faithful and excellent service" as a member of the Amarillo College Board of Regents. Dr. Campbell resigned from the board early this year because of pressure of private business and the demand of his work with the Amarillo Public School Board.

Dr. William E. Laur of Amarillo recently was appointed on a special committee to supervise instruction of a short course in astronomy to begin in July at the Amarillo College. Dr. Laur is a member of the Panhandle Astronomical Society of Texas, which is sponsoring the course. It is offered as a community service by the Vocational Department of the college.

Dr. Chester E. Cook of Dallas became medical director of Southwestern Life Insurance Company, August 1. On the staff since 1953, he succeeds *Dr. C. Frank Brown,* who retired after more than 12 years with the company.

Dr. Harry C. Powell, Jr. of Austin was awarded a Wyeth Laboratories pediatric residency fellowship of $4,800 for 2 years of advanced study in the care and treatment of children. He will take his residency at the Texas Children's Hospital in Houston.

Dr. George R. Herrmann, Galveston, addressed the First District Medical Society at Moorehead, Minn., and also spoke at Fargo, N. D. He will give the Blackwell Memorial Lectures in Denison, November 10, 1959.

At the annual meeting of the National Board of Medical Examiners held in Philadelphia in May, *Dr. M. H. Crabb,* Fort Worth, secretary of the Texas State Board of Medical Examiners, was elected to a second term as a member at large.

Dr. Melvin A. Casberg, Austin, University of Texas vice-president for medical affairs, has resigned effective August 31 to become director of Ludhiana Christian Medical College in the Punjab, India. He was born in India and has spent 1 year as a medical missionary to India.

Miss Patricia Murphy, daughter of *Dr. and Mrs. Weldon O. Murphy* of Amarillo, was to be married to Charles A. Erni of Lucerne, Switzerland, in July.

The mother of *Dr. Sinks McLarty* of Galveston, Mrs. Lizzie McLarty, died July 23 in Giddings.

Future Nurses Clubs Aid Nurse Recruitment, Survey Shows

Future Nurses Clubs in high schools are an aid to recruitment of students into the nursing field, according to a recent survey. Approximately one-third of student nurses responding had belonged to Future Nurses Clubs, many of which are sponsored jointly by county medical auxiliaries.

Sponsored by the Texas State Committee on Careers in Nursing, Texas League for Nursing, and Texas Graduate Nurses Association, the survey was directed to 34 professional nursing schools in the state. Of these, 33 schools answered, with a total of 1,790 students replying.

The study shows that there is a high incidence of students choosing nursing careers in areas where there is close access to schools of nursing. Also, there are more Future Nurses Clubs in the same areas.

In ranking the replies according to reasons influencing the student's decision to go into the nursing field, Future Nurses Clubs ranked eighth. Other important influencing factors were listed as follows: friends or relatives in the nursing field, first; parents, second; personal experiences, third; books, newspapers, radio, television, fourth; professional nurses, fifth; high school teachers and counselors, sixth; friends or relatives not in nursing, seventh.

Hospitals Receive Accreditation

The Arlington Memorial Hospital in Arlington and the Collin Memorial Hospital at McKinney have received accreditation for 1 year from the Joint Commission on Accreditation of Hospitals, according to O. Ray Hurst, executive secretary of the Texas Hospital Association. A great amount of the hospitals' success has been credited to the efforts and recommendation of the "Dry Run Survey Team." This team is made up of representatives from the Texas Medical Association, Texas Hospital Association, and Texas Association of Medical Record Librarians. The team makes visits to hospitals upon request and offers its advice for improvements so that accreditation possibly may be obtained.

Texas Doctors Asked To Report Tuberculosis Cases

Texas doctors are asked to help the Texas Medical Association's Committee on Tuberculosis improve the statewide tuberculosis control program by reporting their tuberculosis cases to the proper health authorities.

Proper reporting of tuberculosis cases helps to protect others from infection, according to Dr. Elliott Mendenhall, chairman of the committee. It gives the health department a more accurate picture of our total tuberculosis problem. Federal appropriations to the health department budget are based on the number of cases, which makes it important that all be reported, Dr. Mendenhall comments. It is a requirement by law that these reports be made.

Wadley Leukemia Association Grows

Organized in the fall of 1958 and with its first semi-annual meeting behind it, the Wadley Leukemia Association, established to aid the Wadley Research Institute and Blood Bank of Dallas in its research program by dissemination of public information, services to patients and their families, and raising funds to buy equipment for leukemia studies, now boasts chapters in five cities, a membership of 500, and $37,000 raised for research.

A group of 18 persons who had lost members of their family to leukemia met first to discuss the idea of easing the suffering of leukemia victims and their families and of contributing toward the goal of a cure or successful treatment for the disease. A general association with Mrs. T. M. Rea of Dallas as president was organized, and now chapters exist in Dallas, Lubbock, Amarillo, Wichita Falls, and Denison.

Dudley L. Rouse, assistant to the director of the Wadley Institute, emphasizes that the association is self supporting, that it assist leukemia sufferers regardless of the place of treatment or physician, and that it has a mailing list of 2,000.

Plans are under way for a benefit performance featuring an outstanding television and radio personality sometime next fall.

Medical Assistants Have Chicago Office

The American Association of Medical Assistants, with which the Texas Medical Assistants Association is affiliated, has opened an office at 510 North Dearborn Street, Chicago 10, with Mrs. Stella Thurnau as executive secretary. Mrs. Thurnau formerly worked at American Medical Association headquarters.

The American Association of Medical Assistants, formed 3 years ago as a nonprofit organization, now has more than 8,000 members with chapters in 21 states and members-at-large in seven other states.

Next meeting of the association is planned for October 16-18 in Philadelphia. Medical assistants and doctors are invited.

National Foundation Sets Aid Program

Details of its patient aid program in arthritis and birth defects have been announced by the National Foundation, completing its transition to include these two conditions as well as poliomyelitis. Research and professional training already have begun in these areas.

In addition to aiding patients with paralytic poliomyelitis, the National Foundation now expects to help children under 19 years of age with spina bifida, encephalocele, or hydrocephalus and children in the same age bracket with rheumatoid arthritis.

Care for patients with arthritis and birth defects will begin gradually as commitments in the polio field are met. Services will include limited hospitalization, diagnosis and outpatient treatment, transportation, physical therapy, and certain drugs and equipment. Basil O'Connor, president of the foundation, indicated that after consultation with chapter medical advisory committees throughout the nation, it was decided the National Foundation could not pay doctors' bills if the American system of doctor-patient relationships is to be preserved.

Insurance Pamphlet Available

Publication of a new pamphlet containing a bibliography on health insurance entitled, "A List of Worthwhile Health Insurance Books" is available upon request to the Health Insurance Institute, 488 Madison Avenue, New York.

The pamphlet draws together a list of books, annual publications, and periodicals in the field of health insurance. In addition, it has chapters dealing with literature on general insurance, gerontology, social security, and other data pertinent to research in the field. One section is devoted to the first known listing of national organizations having a relationship to the task of financing medical care costs.

Children Now Taller, Heavier

Today's children are taller and heavier than those of a generation ago, reports from statisticians of the Metropolitan Life Insurance Company show.

Acceleration in the rate of growth reflects a number of factors, the statisticians say. Among these are increased knowledge of the principles of good nutrition, the availability of a wide variety of foods, and the rise in living standards. Other factors have been the decreased frequency of debilitating diseases among children and the better knowledge of the factors that affect good health and the application of this knowledge in daily living.

DRUG NOTES

Improved Aspirin, New Forms Introduced to Drug Market

HISPRIL, which recently has been introduced by Smith, Kline and French, is available as a 5 mg. spansule (sustained release) or as a 2 mg. (ordinary) tablet. Its generic name is diphenylpyraline. The drug itself is not new. Doctors may recognize dephenylpyraline previously available by Schenley as Diafen tablets and official in the "New and Non-Official Drugs" 1959. Doctors also may recognize the antihistamine as an ingrédient of White Laboratories A-P cillin-200.

The spansule dose form permits a dosage of one spansule every 12 hours, and the company literature emphasizes the drug's low incidence of drowsiness.

Kaopectate with Neomycin may now be purchased by the patient without a prescription. The prescription legend is no longer required on its label.

CALURIN (Dorsey) is a 5 grain tablet of a "soluble" aspirin which is said substantially to reduce gastric irritation. This is possibly one of the most important improvements of the aspirin molecule ever to be made.

Aspirin is a difficult compound to use pharmaceutically. It is unstable in moist air, decomposing into acetic acid and salicylic acids. It frequently forms eutectic mixtures with other substances with which it is prescribed, and causes gastric upset in many cases. In fact, it has been stated by others that if aspirin were synthesized in the laboratory today, its poor chemical and physical properties more than likely would prevent it from ever reaching clinical trial. Calurin is a calcium-acetylsalicylate-carbamide complex or calcium-acetylsalicylate urea complex. This idea of forming soluble complexes with urea is not new. Physicians may recall Afenil N.N.R. 1951 (Knoll), which is a calcium chloride-urea complex. Saccharin functions in a similar manner, because a portion of its structure is similar to urea. An example of this latter complex is Theryl (Church) saccharinated aspirin.

TENUATE, Merrill's new anorexiant and TEPANIL (National) are identical in dose size and price.

Abbott now has ORETIC, its brand of hydrochlorothiazide. This gives a total of three companies thus far with this agent. The others are Merck, Sharp and Dohme with Hydrodiuril, and Ciba with Esidrex.

Lederle has on clinical trial demethylchlortetracycline, a derivative of Aureomycin. It is said to be wide spectrum, more effective, and longer acting than either Aureomycin or Terramycin. Effective blood concentrations are maintained for 24 to 48 hours.

Lederle also has under study two synthetic analgesics, DIAPROMID and PHENAPROMID. These are said to be rather simple chemically when compared to the complex formula of morphine.

GAMMACORTEN (Ciba) is another brand of dexamethasone, now available and identical chemically to Decadron (Merck, Sharp and Dohme) or Deronil (Schering).

Recent reports on long term therapy with dexamethasone (27 patients treated 8 to 16 months) show that it is accompanied by the usual side effects of corticosteroid therapy.

Nineteen patients had a weight gain of more than 9 pounds in 3 to 6 months. One patient gained over 40 pounds. It was found too that dexamethasone has less ten-

dency to produce ulcers than prednisolone. It was noted also that aspirin administered simultaneously permitted steroid reduction.

Another report on 5 years of corticosteroid therapy states that rheumatoid disease still progresses whether or not treatment is given.

DISOMER is an antihistamine introduced by White Laboratories. It is available in 2 mg. tablets, 4 and 6 mg. chronatabs (repeat action tablets), and as a syrup. Disomer is the dextrorotatory form of brompheniramine. Brompheniramine, doctors may recognize as Dimetane (Robins). Robins uses the generic name parabromdylamine.

A similar situation exists with chlorpheniramine or Chlor-trimeton (Schering). The *dl* or optically inactive form, when separated, produces *d* and *l* isomers. The *d* or dextro form is available as Polaramine (Schering). The same relationship exists with Dimetane (dl) and Disomer (dextro form).

It is often possible, after the resolution of a *dl* compound into its respective *d* and *l* isomers, to find that most or all of the therapeutic activity resides in only one of the isomers. It is then possible that this one form may be twice as active as the optically inactive parent substance. It is also possible that undesirable properties may be eliminated by such a resolution. One good example of this is Benzedrine (Smith, Kline and French *dl* amphetamine) which yielded Dexedrine (Smith, Kline and French, d-amphetamine) having much less pressor activity.

—HERBERT SCHWARTZ, M.S., Austin.

Shakespeare and Medicine

In looking up the subject of Shakespearean medicine, it is interesting to find that there were more than 50 books and articles published on this subject before 1900. Most of this writing is biased, to my mind, and is an attempt, by some well meaning author, to give the "Bard of Avon" knowledge which he obviously did not have.

Some of these books, for example, have attempted to "prove" that Shakespeare had a knowledge of the circulation of the blood though he died in 1616 (the same year that we first have knowledge that Harvey taught the circulation in his Lumlein Lectures in London). It is really absurd to give Shakespeare credit for this knowledge, for, as has often been pointed out, knowledge that blood flowed through arteries and veins was known by Galen. The two passages most often quoted to prove the point are the following:

Bru. You are my true and honourable wife;
As dear to me as are the ruddy drops
which visit my sad heart.
—Julius Caesar, 11.1.

which with the heart there cools and ne'er returneth
To blush and beautify the cheek again.
—II Henry VI. iii.2.

That from these two passages it can be inferred that Shakespeare knew the blood flowed in a circle is to my mind impossible. It is a little surprising to me that Harvey never mentioned Shakespeare though he must have seen his plays in London. I presume that "prophets are without honor at home."

Nothwithstanding the fact that Shakespeare did not know about the circulation of the blood, his knowledge of medicine is astounding. The time in which Shakespeare lived corresponded to that period in medicine which immediately preceded the discovery of the circulation of the blood. Vesalius, the great anatomist, died a year before Shakespeare's birth while Harvey's little booklet on the circulation of the blood was published 12 years after the "Bard's" death. Gabriele Fallopius had recently died; Bartolomeo Eustachius still lived; Fabricius ab Aquapendente (Harvey's teacher) was still teaching in Padua; Michael Servetus had been burned at the stake in Geneva; Realdo Colombus had made his anatomical discoveries; and Cesalpinus stood on the brink of anticipating Harvey's discovery. Paracelsus had lived and the contest between his disciples and the Galenists was prolonged into the seventeenth century. In medicine this was a time of transition and strife.

Among the diseases mentioned by Shakespeare are ague, rheumatism, plagues, fevers, measles, sweating sickness, leprosy, apoplexy, colic, consumption, convulsions, cramps, dropsy, epilepsy, gout, green sickness, heartburn, hemiplegia, hydrophobia, itch, jaundice, palsy, sciatica, and sea sickness. Truly an amazing group of diseases for a layman to know.

This passage will give an idea of the scope of his knowledge:

> Now the rotten diseases of the south, the guts-griping, ruptures, catarrhs, loads o'gravel in the back, lethargies, cold palsies, raw eyes, dirt-rotten livers, wheezing lungs, bladders full of imposthume, sciaticas, limekilns in the palm, incurable bone-ache, and the rivelled fee simple of the tetter, take and take again such preposterous discoveries!
> —Troilus and Cressida, v. 1.

Shakespeare knew a great deal about agues and fevers which were prevalent at the time. The following depicts the severe rigor, the pallor of the lips, the dullness of the eye, the thirst, and the weakness that identify the symptoms with an attack of fever:

He had a fever when he was in Spain
And, when the fit was on him, I did mark
How he did shake: 'tis true, this god did shake,
His coward lips did from their colour fly;
And that same eye, whose bend doth awe the world,
Did lose his lustre: I did hear him groan:
Ay, and that tongue of his, that bade the Romans
Mark him, and write his speeches in their books,
Alas! it cried, "give me some drink, Titinius,"
As a sick girl.
—Julius Caesar, i. 2.

Intestinal worms are alluded to in the following metaphorical sense:

Civil dissension is a viperous worm
That gnaws the bowels of the commonwealth.
—I Henry VI. iii.1.

Jaundice is mentioned as follows:

What grief hath set the jaundice on your cheeks?
—Troilus and Cressida, i. 3.

That drinking warms the blood in the liver is referred to:

Char. I had rather heat my liver with drinking.
—Antony and Cleopatra, i. 2.

Gout is referred to in connection with advancing age, its likelihood of occurring in the rich, and its tendency to recur as follows:

> Ros. With a priest that lacks Latin, and a rich man that hath not the gout, for the one sleeps easily because he cannot study, and the other lives merrily because he feels no pain: the one lacking the burden of lean and wasteful learning, the other knowing no burden of heavy tedious penury: these Time ambles withal.
>
> —As You Like It, iii.2.

A great knowledge of materia medica, toxicology, and therapeutics is shown throughout the writings of Shakespeare. Medicinal agents mentioned include aconitum, aqua vitae, civet, coloquintida, hebenon, mandragora, musk, parmaceti, poppy, ratsbane, rhubard, senna and wine.

The following surgical ailments are among those which Shakespeare speaks of in his plays: abscesses, boils, carbuncles, gangrene, fistula, fractures, dislocations, harelip, squint, and venereal diseases.

Obstetrical subjects include the following: premature births, quickening, altered appetite of pregnancy, deformity of the fetus, eruption of teeth before birth, death of the fetus and its retention in utero, retarded labor from deformity of the child, foot presentation, cesarean section, and twin births.

It is impossible in an article of this length to cite references for the information listed. However, I will be glad to furnish them to anyone interested.

In closing, I would like to show this man's great powers of observation in describing the appearance in death from natural causes and from violence. The signs in the following passage are those of death by strangulation after a struggle:

> Warwick. See how the blood is settled in his face.
> Oft have I seen a timely-parted ghost,
> Of ashy semblance, meagre, pale, and bloodless,
> Being all descended to the labouring heart;
> Who, in the conflict that it holds with death,
> Attracts the same for aidance 'gainst the enemy;
> Which with the heart there cools, and ne'er returneth
> To blush and beautify the cheek again.
> But, see, his face is black and full of blood;
> His eye-balls further out than when he lived,
> Staring full ghastly like a strangled man:
> His hair upreared, his nostrils stretched with struggling:
> His hands abroad display'd, as one that grasp'd
> And tugged for life, and was by strength subdued.
> Look, on the sheets his hair, you see, is sticking;
> His well-proportioned beard made rough and rugged,
> Like to the summer's corn by tempest lodg'd
> It cannot be but he was murder'd here:
> The least of all these signs were probable.
>
> —II Henry VI. iii.2.

—WILLIAM M. CRAWFORD, M.D., Fort Worth.

Gifts to the Library

Dr. Josephine Dunlop, Austin, 13 journals.

Dr. J. Edward Johnson, Austin, 6 pamphlets and 3 journals.

Dr. Sam N. Key, Jr., Austin, 15 journals.

Anesthesiology Group, Austin, 264 journals and 5 bound journals.

Dr. B. E. Pickett, Sr., Carrizo Springs, 7 journals.

Dr. Morris Polsky, Austin, 255 journals and 15 books.

Philip R. Overton, LL.B., Austin, 15 journals.

Dr. Albert D. Pattillo, Austin, 42 journals.

Mrs. Ernest R. McCauley, Moody, 62 journals and 21 books.

Dr. Howard O. Smith, Marlin, 42 journals and 13 books.

Dr. E. C. Fox, Dallas, 172 reprints.

★ Books

Books Newly Acquired

American Heart Association, Floyd R. Skelton (Ed.): *Hypertension,* vol. 7 *(Drug Action, Epidemiology and Hemodynamics),* New York, 1959.

Bykov, Konstantin M.: *Cerebral Cortex and the Internal Organs;* Translated by W. Horsley Gantt, New York, Chemical Publishing Co., 1957.

Ciba Foundation Symposium: *Carcinogenesis,* Boston, Little, Brown and Co., 1959.

Ciba Foundation Symposium: *Regulation of Cell Metabolism,* Boston, Little, Brown and Co., 1959.

Clark, Margaret: *Health in the Mexican-American Culture,* Berkeley, University of California Press, 1959.

Dowling, Harry F., and Jones, Tom: *That the Patient May Know,* Philadelphia, W. B. Saunders, 1959.

Grant, Robert P.: *Clinical Electrocardiography,* New York, McGraw-Hill, 1957.

Hayt, Emanuel: *Law of Hospital and Nurse,* New York, Hospital Textbook Co., 1958.

Hilleboe, Herman E., and Larimore, G. W.: *Preventive Medicine,* Philadelphia, W. B. Saunders, 1959.

Hopps, Howard C.: *Principles of Pathology,* New York, Appleton-Century, 1959.

Jackson, Chevalier, and Jackson, C. L.: *Diseases of the Nose, Throat and Ear,* Philadelphia, W. B. Saunders, 1959.

Jaco, E. Gartly: *Patients, Physicians and Illness,* Glencoe, Ill., Free Press, 1958.

Jahoda, Marie: *Current Concepts of Positive Mental Health,* New York, Basic Books, 1958.

Kline, Nathan S. (Ed.): *Second International Congress of Psychiatry Proceedings of the Psychopharmacology Symposium — Psychopharmacology Frontiers,* Boston, Little, Brown, and Co., 1959.

McLaughlin, Harrison L.: *Trauma,* Philadelphia, W. B. Saunders, 1959.

Mahoney, John Thomas: *Merchants of Life,* New York, Harper and Brothers, 1959.

Martin, Charles, and Martin, James A.: *Low Intensity Radium Therapy,* Boston, Little, Brown and Co., 1959.

Meschan, Isadore: *An Atlas of Normal Radiographic Anatomy,* Philadelphia, W. B. Saunders, 1959.

Nelson, Waldo E.: *Textbook of Pediatrics,* Philadelphia, W. B. Saunders, 1959.

Ogilvie, Sir Heneage: *Hernia,* London, Edward Arnold, 1959.

Osler, Sir William: *A Way of Life and Selected Writings of Sir William Osler,* New York, Dover Publications, 1951.

Pondoev, G. S.: *Notes from a Soviet Doctor,* New York, Consultants Bureau, 1959.

Steer, Charles M.: *Moloy's Evaluation of the Pelvis in Obstetrics,* Philadelphia, W. B. Saunders, 1959.

Swinny, Boen: *Conquering Your Allergy,* New York, Fleet Publishing Corporation, 1959.

Williams, Roger J.: *Alcoholism: The Nutritional Approach,* Austin, University of Texas Press, 1959.

Year Book Publishers: *Year Book of Endocrinology,* 1958-1959.

Year Book Publishers: *Year Book of Orthopedics and Traumatic Surgeons,* 1958-59.

Book Notes

Blood and Bone Marrow Patterns

G. D. TALBOTT, M.D., Formerly Chief of Medicine, 2750th Hospital, and Respiration Section, Aero Medical Laboratories, Wright-Patterson Air Force Base, Dayton, Ohio; ELMER R. HUNSICKER, B.S., Formerly Chief of Laboratories, 2750th Hospital, and Respiration Section, Aero Medical Laboratories, Wright-Patterson Air Force Base, Dayton, Ohio; JONAH LI, M.D., University of California Medical Center, San Francisco. 59 pages. $12. New York and London, Grune and Stratton, 1957.

This text is written primarily as a rapid reference for clinical pathologists and those in the laboratory concerned in the diagnosis of blood dyscrasias. The book contains 59 pages of excellently prepared colored reproductions of stained blood films and bone marrow preparations. Each colored picture has the various types of cells identified and properly named. The text contents are presented in a systematic manner and, therefore, are ideal for the student in hematology. The minute details in the differential diagnosis of the various blood dyscrasias from a cytological standpoint are well shown. This is a text which should be included as a reference in the library of every clinical laboratory.

—H. J. Schattenberg, M.D., San Antonio.

A Doctor Speaks His Mind

ROGER I. LEE, M.D., Chairman and President of the Board of Trustees of the American Medical Association, President of the American College of Physicians, Professor of Hygiene at Harvard, member of the Harvard Corporation, and a founder of the Harvard School of Public Health, of which he was for a time acting dean. 119 pages. $3. Boston and Toronto, Little, Brown and Company, 1958.

A happy and devoted doctor for over 50 years, Roger I. Lee is one of the best known and most loved of medical practitioners. In "The Happy Life of a Doctor," he told the story of his career, and of the people, both doctors and patients, that he has known. Now, in "A Doctor Speaks His Mind," Dr. Lee returns to cast an irreverent eye on some recent developments in medicine and its practice.

High on Dr. Lee's list of targets are the specialists who know "more and more about less and less" and those doctors who diagnose a patient's eye or heart or lung without knowing their patient as a whole. The general practitioner or family doctor, he believes, has always been and always will be the backbone of the medical profession.

With a firm belief in the rugged individualism of the doctor and the virtues of "old-fashioned common sense as applied to medicine in any age," he draws a telling picture of the plight of the patient today, bewildered by the array of medical experts facing him and shunted from one impersonal waiting line to another.

Of particular interest is Dr. Lee's discussion of the growth of medical knowledge, especially in the field of public health, and his belief that medicine, like art, is a truly universal profession. This leads him to an examination of socialized medicine; Dr. Lee takes his stand against government interference in the medical profession. He also takes a potshot at several plaster images worshipped in the name of science, such as statistics and a pet peeve, "light, 'nourishing' diets" and at medical fads he particularly dislikes.

Now in his seventies and rounding out his fifty-second year of medical practice, Dr. Roger I. Lee has had, and continues to have, a career rich in accomplishment and friendship. He was born in Peabody, Mass., educated at Harvard (which conferred an honorary degree on him in 1954), and served his internship at the Massachusetts General Hospital in Boston. His practice since, as a general practitioner, has been in that city, although he has traveled all over the United States for medical meetings and conferences.

Therapeutic Exercise

SIDNEY LICHT, M.D., Honorary Member, British Association of Physical Medicine, Danish Society of Physical Medicine, and French National Society of Physical Medicine. 893 pages. $16. New Haven, Conn., Elizabeth Licht, Publisher, 1958.

This volume is the third in the Physical Medicine Library, all edited by Dr. Sidney Licht. In his preface to the second volume of the series, Dr. Licht commented, "The reviewer of one specialty journal across the seas ended his assessment of the book with these words, 'I do not recommend it as a book to be taken on a train journey.' The trouble with too much of the physical medicine literature available has been that it was keyed to the 'train' level erroneously attributed to the physical therapists. We hope and expect that the reviewer referred to above will find this book also unsuitable to be taken on a train journey. The only journey for which it was intended is along the road to better physical medicine."

The present volume continues the same high standards set by its predecessors in the series. Undoubtedly, it is the most complete book on its subject ever published and justly deserves the adjective, "encyclopedic." Unlike most books which may be described thus, however, the present one is, for the most part, written in such a clear manner that any physician who is seriously interested in any of its subjects will find it helpful.

There are 36 contributors to this book, and this, of course, makes for some unavoidable unevenness in the quality of the individual chapters. This defect, though, is minor when it is considered in the light of the relatively monumental contribution to medical literature that this book represents. Since I have already described the book as "encyclopedic," it is unnecessary to list all its subjects here. In brief, they progress from neuromuscular physiology and anatomy through basic concepts of muscle strength evaluation and exercise to specific types of exercises; then the second half of the book is devoted to the specific uses of exercises in various diseases. There is even a chapter on "Exercise for Healthy Persons."

This book can be recommended without reservation to any physician who employs therapeutic exercises in his practice.

—J. R. Oates, M.D., Houston.

Groves' Synopsis of Surgery

SIR CECIL WAKELEY, LL.D., M.Ch., D.Sc., F.R.C.S., F.A.C.S., F.R.A.C.S., Past President of the Royal College of Surgeons of England; Fellow of King's College, London. ed. 15. 650 pages. $8.50. Baltimore, Williams and Wilkins Company, 1958.

The fifteenth edition of Groves' "Synopsis of Surgery" has been thoroughly revised by Sir Cecil Wakeley with the help of L. T. Cotton, surgeon at King's College Hospital. Mr. Cotton will take over the future editions of the book. The chapters on surgery, particularly arterial grafting and vascular surgery, have had much new material added. This new edition should be as popular as the past editions.

The Cerebrospinal Fluid

G. E. W. WOLSTENHOLME, M.B., B.Ch., and CECILIA M. O'CONNOR, B.Sc. 335 pages. $9. Boston, Little, Brown and Company, 1958.

This volume is unusual among those published by the Ciba Foundation, of which it is the thirty-ninth to appear, in that the large number of plates has made it desirable to print the whole book on coated paper.

Among the many questions considered at this symposium were the following: How accurate is our information about the anatomy of the pia-arachnoid, arachnoid villi, choroid plexuses, innervation and vascularization of these structures, and arrangement and significance of the subarachnoid, perivascular, and perineuronal spaces?

Do we really know where, how, and why the cerebrospinal fluid is produced and absorbed, and is it a secretion, excretion, or transudate?

Is the process under nervous or hormonal control, are there secretory granules in the choroidal epithelium, and what is the true function of the choroid plexuses?

Can we explain the blood-brain and blood-cerebrospinal fluid barriers and their variations at different ages and in different regions?

By what means and for what reason does the cerebrospinal fluid circulate?

And how may all these fundamental considerations be correlated with clinicopathological observations or utilized to determine the most rational modes of treatment?

Anatomists, neurologists, pathologists, psychiatrists, pharmacologists, and neurosurgeons came from all over the world to attend this meeting to contribute the distilled products of their research and reflections. The result is an important book.

Epilepsy

MANFRED SAKEL, M.D., ed. 1. 204 pages. $5. New York, Philosophical Library, 1958.

Epilepsy is presented first of all as a document of intense historic interest—a great doctor's last contribution to medical literature. No attempt has been made to alter Dr. Sakel's original material though it has been annotated and brought up to date under the guidance of several neurologists and psychiatrists.

It has been three decades since Dr. Sakel made his discovery of the insulin "shock" treatment of mental illness. The treatment was slow to receive acceptance and by the time the Swiss Society for Psychiatry reported that insulin "shock" was being taken up on an international scale, Dr. Sakel had already taken refuge in the United States as a refugee from Nazi tyranny.

Upon his death, Dr. Sakel left behind an uncompleted manuscript expounding his interesting theories on the mechanism and therapy of this still unconquered disease epilepsy.

The Amphetamines

CHAUNCEY D. LEAKE, Ph.D., Professor of Pharmacology, Ohio State University, Columbus. 167 pages. $4.50. Springfield, Ill., Charles C Thomas, 1958.

The author of this small book needs no introduction to Texas doctors. He explains that the book is merely an introduction to a study of amphetamines and is intended for physicians and not pharmacologists. To quote Dr. Leake, "if it aids physicians, lawyers, sociologists, lawgivers and administrators, and other intelligent people to understand how the amphetamines act and how they may be used for individual and social benefit, it will have accomplished its purpose."

The Birth of Normal Babies

LYON P. STREAN, Ph.D., D.D.S., F.A.P.H.A., Consultant, Norristown State Hospital and Montgomery Hospital, Norristown, Pa. 194 pages. $3.95. New York, Twayne Publishers, 1958.

This is an excellent small book which should be read and kept in the library of each physician who is engaged in obstetrical practice to any extent. Actually, for the person engaged in a general practice, it would seem to be worth while to have several copies available for lending to those patients who always want to know the reasons for certain specific instructions given them.

Dr. Strean has approached the problem of the birth of babies with congenital defects in a logical manner. The conclusions that he has been able to draw from diligent searching of patient histories for possible clues to the etiology of defects in babies at birth, plus animal experimentation, plus observation, are impressive. Further, his manner of presentation, the terms in which the information is couched make the reading and understanding easy even for the laity.

It is a well known fact that the patient who understands the reason for the physician's opinion and instructions is the patient who usually will respond with the utmost in cooperation.

When an obstetrical patient, or the one who hopes to be such, has read about the results of psychic, emotional, physical, or chemical trauma to the woman during the first trimester of pregnancy, as presented by Dr. Strean, she will be much better prepared to avoid such incidents. If all such patients could be induced to read this book, it is likely that the rate of incidence of congenital defects would be appreciably decreased.

—Houston M. Burk, M.D., Tulia.

Conquering Your Allergy

BOEN SWINNY, M.D. 221 pages. $3.95. New York, Fleet Publishing Corporation, 1959.

In this well written book, Dr. Swinny has drawn upon a wealth of clinical experience in presenting the subject of allergy in plain terms readily understandable by the lay reader for whom the book was intended. In an easy style, the author has presented just enough scientific background to substantiate his points, but has avoided the pitfall of becoming too technical.

The first three chapters describe the nature of allergic disease, the causes of allergic disease, and the reactive tissues of the allergic person. In portraying a typical allergist's routine, Dr. Swinny discusses in the fourth chapter the various maneuvers that might be required in the clinical management of allergic disease. The fifth and concluding chapter is essentially a review. A short appendix contains brief instructions on elimination diets.

In the opinion of this reviewer, "Conquering Your Allergy," will be a valuable medium which allergists may employ profitably for patient instruction. Likewise, if the book should prove to be widely read by the lay public, it will do much to make people allergy conscious and direct them to seek proper medical attention.

—Homer E. Prince, M.D., Crockett.

Alcoholism

ARNOLD Z. PFEFFER, M.D., Formerly Associate Clinical Professor of Psychiatry, College of Medicine of New York University, In charge, Consultation Clinic for Alcoholism, New York University-Bellevue Medical Center. 98 pages. $6.50. New York and London, Grune and Stratton, 1958.

The Pneumoconiosis Problem

EUGENE P. PENDERGRASS, M.D., Professor of Radiology, University of Pennsylvania School of Medicine, Philadelphia. 146 pages. $6.75. Springfield, Ill., Charles C Thomas, 1958.

Dr. Pendergrass has been a student of the effects of dust inhalation since 1919. The book is the entire manuscript of the "Caldwell Lecture" which the author gave in October, 1957, at the annual meeting of the American Roentgen Ray Society. It is his hope to make more radiologists interested in pneumoconiosis by his discussion of the guide lines which have been helpful to him in the interpretation of the roentgenograms. Attention is called to the fact that many of the lesions are not diagnosed in themselves and simulate other diseases. Especial emphasis is placed on the necessity of improving fluoroscopic and roentgenographic studies of chest physiology to the end that the present methods of estimating pulmonary disability might be improved. The book should interest internists, industrial physicians, thoracic surgeons, and chest physicians.

★ **Texas Medical Association**

Better PR for Texas Doctors To Be Stressed at September Meeting

In an effort to help Texas doctors promote better public relations, the Texas Medical Association is sponsoring its fifth annual Public Relations Conference, September 26, at the headquarters building in Austin.

In conjunction with the conference will be the eighth Orientation Program for new and transfer members of the Association, September 26; the fall meeting of the Executive Board, September 27; and meetings of the Association's various councils, committees, and boards scattered throughout the week end.

Doctors and their wives will be guests of the Association for a luncheon Saturday in the headquarters building and of the Charles O. Finley & Company for a hospitality hour at the Driskill Hotel that evening. Those wishing to attend the University of Maryland versus University of Texas football game, following the hospitality hour, should write to the Executive Secretary, Texas Medical Association, 1801 North Lamar Boulevard, Austin; tickets are $4.

Public Relations Conference

The keynote speaker for the conference will be Dr. F. W. Yeager of Corpus Christi, President of the Texas Medical Association, who will begin the program at 10:05 a. m. His topic will be "Strength: Combination of Unity and Prestige." The theme to be carried out at the morning session will stress public relations for the individual physician, while the afternoon session will concentrate on the physician's press relations. The program follows:

Morning Program, 10 a. m.

The Eleventh Hour. Chester H. Lauck, Executive Assistant, Continental Oil Company, Houston, is a rare combination of businessman and entertainer. Better known as "Lum" of the popular radio and movie team of "Lum and Abner," Mr. Lauck travels more than 100,000 miles annually through Conoco's 27 state marketing area making speeches. Mr. Lauck began as a banker before he and his boyhood friend formed the team of "Lum and Abner." In addition to being with Continental Oil Company, he operates a large cattle ranch in Nevada.

Public Relations Through Practice Management. Nelson J. Young, Detroit, of Professional Management, is a graduate of the University of Michigan's School of Business Administration. He entered the field of professional management in 1946. His present professional activities include managing the Florida East Coast office of PM and being a managing partner of the Detroit PM office. He is director of Block and Shaggs Associates, Inc., and vice-president of the Society of Professional Business Consultants.

Blue Shield—Its Key Role in Financing Medical Care. Dr. Donald Stubbs, chairman, Board of Directors, Blue

DONALD STUBBS

NELSON J. YOUNG

CHESTER H. LAUCK

Shield Medical Care Plans, Washington, D. C., has been in private practice since 1935. He is a diplomate of the American Board of Anesthesiology and a fellow of the American College of Anesthesiology. He has taught mostly surgery and anesthesiology at George Washington University since 1929 and is now clinical professor of anesthesiology there. He is chief of staff and head of the Department of Anesthesiology at Walter Reed Hospital and National Institutes of Health.

I Am a Doctor. This film, produced by the American Medical Association, will have its Texas premiere for doctors during the conference. It is designed to attract outstanding high school and college students into a career in medicine.

Afternoon Session, 1:45 p. m.

Health Care of the Aged. Dr. Frederick C. Swartz of Lansing, Mich., chairman of the Committee on Aging, American Medical Association, will present this talk.

Building More Effective Liaison Between the Press and Medicine. This panel discussion will be moderated by Dr. Joe R. Donaldson, Pampa, chairman, Council on Public Relations and Medical Service, Texas Medical Association. Other participants and the topics they will discuss include the following:

Press-Physician Relationship Needs Further Understanding—Highlights of a Statewide Survey of Newspaper Editors, Bill Barnard, Dallas, Bureau Chief, Associated Press.

Achieving More Effective Doctor-Press Relationships in Smaller Communities, W. E. Berger, Hondo, Editor, Hondo Anvil Herald.

The Key Role of the Physician and the County Medical Society, Bob Reid, El Paso, Mott, Reid and McFall, Public Relations Counselors.

The New Code of Cooperation Between the Medical Profession, Hospitals, and All Media of Communication, Dr. A. Fletcher Clark, Jr., San Antonio, member, Council on Public Relations and Medical Service, Texas Medical Association.

Orientation Program

The eighth Orientation Program for new and transfer members of the Association will be held September 26; invitations have been sent to 504 doctors. Presiding will be Dr. Barton E. Park, Dallas, vice-president of the Texas Medical Association, and Dr. Charles P. Hardwicke, Austin, Speaker, House of Delegates.

Morning Session, 9:05 a. m.

Welcome: Objectives of Orientation Program. Dr. Travis Smith, Abilene, Vice-Chairman, Board of Councilors.

The Texas Medical Association; An Accounting of Stewardship; What Happens to Your $50 Dues. Dr. Troy A. Shafer, Harlingen, Board of Trustees.

Public Relations and Socio-Economic Considerations in the Practice of Medicine. C. Lincoln Williston, Austin, Executive Secretary.

Strength: Combination of Unity and Prestige. Dr. F. W. Yeager, Corpus Christi, President.

Public Relations Through Office Management. Nelson J. Young, Detroit, Professional Management.

Blue Shield—Its Key Role in Financing Medical Care. Dr. Donald Stubbs, Washington, D. C., Chairman, Board of Directors, Blue Shield Medical Care Plans.

Afternoon Session, 1:00 p. m.

Medical Ethics Considerations in the Practice of Medicine. Dr. C. E. Oswalt, Jr., Fort Stockton, Chairman, Board of Councilors.

Medical Etiquette; Obligations of the Physician to Colleagues and to the Profession. Dr. R. Mayo Tenery, Waxahachie, Councilor, District 15.

Health Care for the Aged. Dr. Frederick C. Swartz, Lansing, Mich., Chairman, Committee on Aging, American Medical Association.

Serving the Doctors of Texas. Donald M. Anderson, Austin, Assistant Executive Secretary.

Workmen's Compensation Laws; Charges, Obligations and the Law. Smith Pettigrew, Dallas, Medical Coordinator, Texas Employers' Insurance Association.

Legal Aspects of Medical Practice; Malpractice—How to Avoid It. Philip R. Overton, Austin, General Counsel.

The Eleventh Hour. Chester Lauck, Houston, "Lum" of "Lum and Abner," Continental Oil Company.

Hotel Accommodations

The following hotels and motels have set aside rooms for the members of the Texas Medical Association on September 25-27. Members are asked to make their request directly to the facility of their choice and indicate on their request that they are a member of the Association. Hotels: Stephen F. Austin Hotel, 701 Congress Avenue; Commodore Perry Hotel, 800 Brazos Street; Driskill Hotel, 117 East Seventh Street. Motels: Mount Vernon Motor Courts, 4001 East Avenue; Holiday Inn Motor Hotel, 6901 Interregional Highway; Ramada Inn Roadside Motor Hotel, 5650 Interregional Highway; Terrace Motor Hotel, 1201 South Congress.

★ American Medical Association

Texans Look Forward to AMA Clinical Session

Texas will play host this year to the American Medical Association's clinical session for the first time, in Dallas, December 1-4.

Lectures and symposiums featuring speakers from throughout the nation will be held during the entire session in the mornings and afternoons, and there will be panel discussions the first three days. Breakfast round-table discussions will be held each morning. Closed circuit television shows will be presented each day of the session featuring Texas specialists. Officials of the Texas Medical Association and American Medical Association will speak before the general session, December 1. Also included during the clinical session will be a meeting of the House of Delegates, scientific and technical exhibits, and a health fair designed especially for the public. Most events will be housed in the Memorial Auditorium.

Dr. Everett C. Fox of Dallas has been named general chairman of the session and will preside over the general session. His executive assistants are C. Lincoln Williston, Austin, Executive Secretary, Texas Medical Association, and Millard Heath, Dallas, Executive Secretary, Dallas County Medical Society.

Other committee chairmen include Dr. C. D. Bussey, Dallas, Scientific Program Committee; Dr. James A. Martin, Scientific Exhibit Committee; Dr. Perry C. Talkington, Entertainment Committee; Dr. John S. Chapman, Radio-Television Committee; Dr. Oscar Marchman, Jr., Housing Committee; Dr. James H. Herndon, Transportation Committee; Dr. Margaret Watkins, Women Physicians' Committee; Dr. Elliott Mendenhall, Publicity Committee; Dr. Samuel E. Stuart, Committee on Registration, and Dr. Max Cole, Health Fair Committee, all physicians of Dallas.

Reservations for room accommodations may be obtained by writing American Medical Association, Housing Bureau, 1101 Commerce Street, Dallas 2. Requests should include four choices of hotel or motel with full details and dates and type of room desired.

AMA Public Relations Institute Held in Chicago, August 20-21

"Is Medicine on the Right Track?" was the theme of the American Medical Association's 1959 Public Relations Institute held August 20-21 in Chicago.

Dr. Rolf Schlogell of Cologne, Germany, headed the conference with a talk on the danger of government-controlled health insurance, and Dr. Woody Freamo, Canadian Medical Association, reported on steps that led to government health care in Canada. A panel discussion on medical careers was moderated by the winners of the American Medical Association's citations for their exhibits at the National Science Fair. A session was devoted to discussions of medical care and insurance as a payment mechanism.

Preceding the institute, the Medical Society Executives Association held a one day institute on medical society management in Chicago, August 19. C. Lincoln Williston, Executive Secretary, Texas Medical Association, was chairman of the institute. Donald M. Anderson, Assistant Executive Secretary, served as moderator of a session on "Personnel and Staff Management."

Dr. Russell L. Deter, El Paso, contributed as an interrogator at a session on the "Cost of Medical Care" at the PR Institute. Dr. Joe R. Donaldson, Pampa, outlined the Texas Medical Association's Anson Jones Award project.

The keynote speaker was Kenneth McFarland, Ph.D., Topeka, Kan. Among the topics discussed were association financing, bulletins, journals, and publications, and how an association can develop a program of activities.

★ County Societies

County Society News Briefs

The *Pecos-Jeff Davis-Presidio-Brewster Counties Medical Society* met June 2 in Alpine. Speaker of the evening was Dr. Lloyd R. Hershberger of San Angelo, who spoke on "Difficult Diagnostic Problems and Fever of Undetermined Origin."

The *Pecos-Jeff Davis-Presidio-Brewster Counties Society* will meet for dinner and a scientific meeting on radiology by Dr. James D. Lancaster of Fort Stockton at Fort Stockton, September 1.

A film on "The Physician and Emotional Disturbances" will be shown at the September 8 meeting of the *Coleman County Society* at the Overall Memorial Hospital in Coleman.

The *Taylor-Jones Counties Society* will meet September 8 at the Woman's Club in Abilene. Dr. Hal W. Smith of Terrell will speak on "Alcoholism."

Dr. T. G. Blocker of Galveston will be guest speaker at the *Jefferson County Society* meeting September 14 at the Hotel Dieu Hospital in Beaumont.

Physicians from both sides of the border got together at a meeting of the *Webb-Zapata-Jim Hogg Counties Medical Society* and the Nuevo Laredo Medical Society at Laredo, July 9. This was the first meeting of its kind in that area.

Shown from left to right are Dr. Francisco Herrera, president of the Nuevo Laredo Medical Society; C. Lincoln Williston, Austin, Executive Secretary of Texas Medical Association; and Dr. Lauro Montalvo, president, Webb-Zapata-Jim Hogg Counties Medical Society.

Featured speaker for the occasion was State Senator Henry B. Gonzalez of San Antonio, who praised the two societies for joining together at one meeting which will "preserve amity and good will" along the border. Special guests included Col. Charles W. DeBaun, commander of the medical squadron at Laredo Air Force Base, Mayor and Mrs. J. C. Martin, Jr. of Laredo; C. Lincoln Williston, Austin, Executive Secretary, Texas Medical Association; State Senator Henry B. Gonzalez; Major Hernandez Del Angel, Medical Corps, Mexican Army; Mr. and Mrs. Daniel Tamez, San Antonio; and Jose L. Gonzalez, Sanitary Engineer for City of Laredo.

Entertainment was provided by Maria Antonia Herrera of Mexico City, who sang and played the guitar, and Mrs. Daniel Tamez, cousin of Dr. Leo Cigarroa, secretary of the tri-county society who played two selections on the piano.

★ District Societies

District 12 Doctors and Wives Meet in Marlin, July 14

The annual meeting of the Twelfth District Medical Society was held July 14 at the Student's Memorial Center at the Texas Agricultural and Mechanical College at College Station.

Four presentations were given on the scientific program in the afternoon. They included "Obstetrics and Gynecology," Dr. Jules W. Vieaux, Dallas, clinical professor of obstetrics and gynecology, Southwestern Medical School; "Breast Cancer," Dr. Robert S. Sparkman, Dallas, clinical

associate professor of surgery, Southwestern Medical School; "Cardiology," Dr. Billy Byrd Oliver, Dallas, clinical assistant professor of internal medicine, Southwestern Medical School; and "Pediatrics," Dr. Percy E. Luecke, Jr., Dallas, clinical instructor in pediatrics, Southwestern Medical School.

A joint luncheon was held for the society and auxiliary. The Woman's Auxiliary had a meeting in the morning and a tea in the afternoon.

★ Woman's Auxiliary

Auxiliary Leaders to Exchange Ideas

Officers and committee chairmen on the state and county level will be in Austin Thursday and Friday, September 24 and 25, for the Executive Board meeting and School of Instruction conducted by the Woman's Auxiliary to the Texas Medical Association.

Mrs. Haskell D. Hatfield, El Paso, President of the state Auxiliary, will preside over the Board meeting beginning at 2 p. m. Thursday in the Texas Medical Association headquarters building. An informal dinner with entertainment will be held that evening at the Driskill Hotel. With registration at 9 a. m., the day-long School of Instruction will be presented Friday at Association headquarters under the chairmanship of Mrs. Allan Shields of Victoria. There will be a luncheon at noon.

Women participating in these Auxiliary events are invited to stay over for the Association's Public Relations Conference Saturday, September 26.

Cards Support Medical Schools

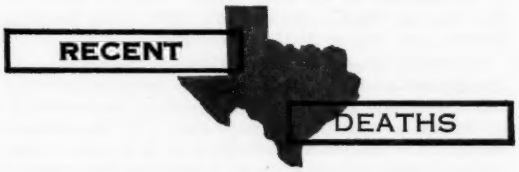
A new, distinctive Christmas card designed by one of its members, Mrs. D. J. Sibley of Fort Stockton, will be on sale again this year by the Woman's Auxiliary to the Texas Medical Association to support the American Medical Education Foundation. Featuring the angels pictured here, the cards will be available at the time of the Auxiliary's fall School of Instruction and may be obtained thereafter from the Auxiliary's executive secretary, 1801 North Lamar Boulevard, Austin. Boxes of 25 cards will be $2.50 per box. Checks should be payable to the American Medical Education Foundation.

The Christmas cards available to doctors' families are one of several ways in which the Auxiliary has given increasing support to AMEF through the years since it became a part of the national program in 1952. Each year the contribution from the Texas Auxiliary has increased. The goal for the past year was $16,500, and this was exceeded by more than $500. In fact, the Texas Auxiliary took first place in the nation, and Navarro County received a national award for the largest contribution in its membership group of 26-60.

Each year, more and more use is made of the three cards available from the national AMEF office to facilitate gift giving. The most widely used is the "Sympathy" or memorial card, sent to the bereaved family when a gift is given in memory of a friend who has died. The "In Appreciation" card offers a wonderful way to show one's thanks to a physician who has given his time and talents in caring for a colleague's family. To be used on any other occasion—a birthday, a special occasion honoring someone—the "Utility" card has space for a personal message from the donor. The cards are in good taste, printed on quality paper. Each gift may be designated for a specific medical school or put into the general fund.

Although the AMEF has given about $1,000,000 each year to approved medical schools to use as they considered most necessary, the need for continued help should concern each doctor and his wife.

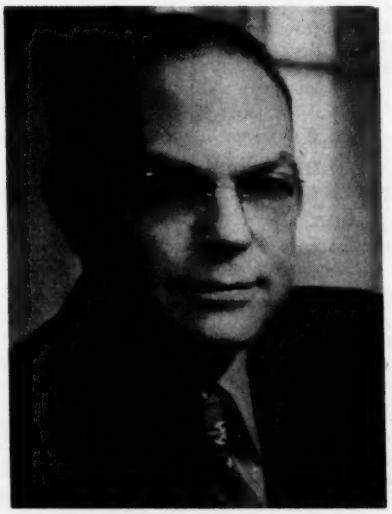
—MRS. A. O. SEVERANCE, San Antonio.



DR. CLIFTON E. HIGH

Dr. Clifton Earle High, Pampa, a past president of two county medical societies, died May 10, 1959, as a result of a heart attack.

A native of Dallas, Dr. High was born February 23, 1900. His parents were Earle Lee and Byrcha Maude (Neace) High. Starting out in pharmacy, Dr. High received a degree from the Baylor College of Pharmacy at Dallas in 1918. Later he was graduated from Baylor University College of Medicine and following his graduation, interned at Fitzsimons Army Hospital in Denver. He did



DR. CLIFTON E. HIGH

postgraduate work at the Chicago Eye, Ear, Nose, and Throat Hospital and was certified by the American Academy of Ophthalmology and Otolaryngology.

Specializing in diseases of the eye, ear, nose, and throat, Dr. High went to Pampa in 1938. Prior to that he had practiced in Wellington. He served as a first lieutenant with the United States Army Medical Corps from 1925 until 1927.

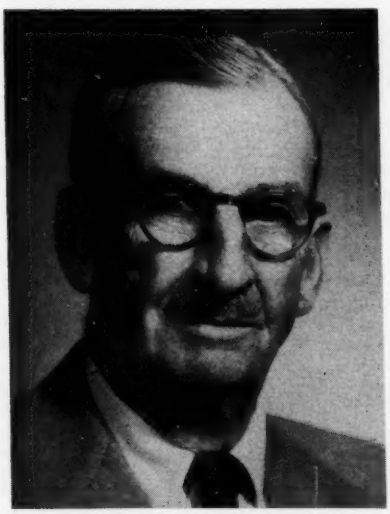
A member of the Texas Medical Association since 1928, Dr. High was at one time president of the Childress-Collingsworth-Donley-Hall Counties Medical Society. After his move to Pampa, Dr. High joined the Gray-Wheeler Counties Medical Society, serving as president of that society in 1941 and again in 1945 and as secretary in 1943. Currently Dr. High was a member of the Gray-Hansford-Hemphill-Lipscomb - Roberts - Ochiltree - Hutchinson - Carson Counties Medical Society. Dr. High belonged to the American Medical Association, and was a past president of District 3 Medical Society. He was a member of the Methodist Church and the American Legion and enjoyed fishing and gardening in his spare time.

Members of the family who survive include his wife, the former Miss Mary Ann Bobo, whom he married in 1925; one son, John High of Moses Lake, Wash.; one grandson; his parents, Mr. and Mrs. Earle L. High of Justin; three brothers, C. H. High of Fort Worth, George High of El Paso, and Milton High of Justin; and two sisters, Miss Evelyn High of Justin and Mrs. Audrey Butts of Dallas.

DR. FREDERICK R. LUMMIS

Dr. Frederick Rice Lummis, clinical professor emeritus of the Baylor University College of Medicine and past president of the Harris County Medical Society, died May 24, 1959, of a heart attack.

Born November 1, 1884, in Houston, Dr. Lummis was the son of Henry Holt and Minnie (Rice) Lummis. He received his preliminary education in Houston and was graduated from the University of the South in Sewanee, Tenn., in 1906 and Jefferson Medical College in Philadelphia in 1913. Following a residency at Jefferson Hospital in Philadelphia, he served as a captain in the United States Army Medical Corps. He did postgraduate work at the Postgraduate School at the University of Pennsylvania and later in Vienna. He had practiced internal medicine in Houston since 1915. At the time of his death, he was senior consultant at the Diagnostic Clinic of Houston.



DR. FREDERICK R. LUMMIS

Dr. Lummis was honored late last December by having a grant-in-aid program to promote medical research named after him—the Frederick R. Lummis Medical Foundation. He served as chief of staff at Hermann Hospital from 1939 until 1946 and was director of the Texas National Bank and a Rice Institute trustee emeritus. He was a diplomate of the American Board of Internal Medicine and a fellow of the American College of Physicians. He was a member of the American Medical Association and Texas Medical Association, serving as secretary of the Section on Public Health of the State Association in 1942.

He was a past president of the Houston Academy of Medicine and was chairman of the Houston Board of Health in 1945. He was a member of the Houston Country Club, the Eagle Lake Rod and Gun Club, and the Episcopal Church.

Survivors include his wife, the former Miss Annette Gano of Dallas, whom he married June 30, 1923, in Houston; two sons, William R. Lummis of Houston and Dr. Frederick R. Lummis, Jr. of San Antonio; and two daughters, Mrs. George F. Neff of Houston and Mrs. Paul S. Russell of Boston.

DR. MANLEY B. COHEN

Dr. Manley Benjamin Cohen, El Paso thoracic surgeon, died in El Paso on May 24, 1959.

Dr. Cohen was born September 7, 1914, in Boston, son of Morris H. and Anna R. Cohen. He received his preliminary education in Cambridge, Mass., and was graduated from Harvard University there in 1936 and the Faculty of Medicine, Laval University in Quebec, Canada, in 1942. He interned at the University Hospitals in Quebec and served a residency at the Massachusetts Memorial Hospital in Boston, the Veterans Administration Hospital in Newington, Conn., and the Veterans Administration Hospital in Kerrville. He did postgraduate work at the University of Minnesota in Minneapolis. He was a major in the United States Army in Europe during World War II. Dr. Cohen had practiced in El Paso since 1952.

Having done research in cardiovascular surgery, Dr. Cohen was an author of numerous articles on chest conditions. He was chief of surgery at the Hotel Dieu Hospital and vice chief of staff at the El Paso General Hospital. He was chairman of the education committee and editor of the *Bulletin* at Providence Memorial Hospital.

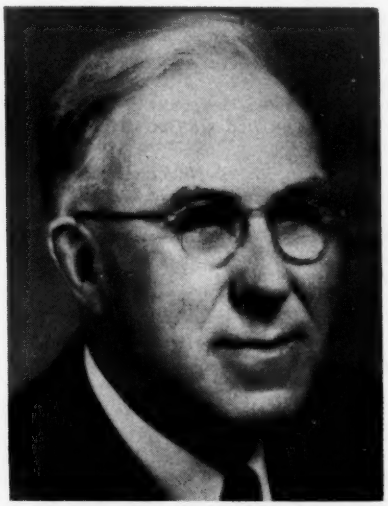
He belonged to the American Medical Association, El Paso County Medical Society, Texas Medical Association, National Tuberculosis Association, American Heart Association, Southern Medical Association, Southwestern Medical Association, National Medical Veterans Society, and the World Medical Association. He was a fellow of the American College of Chest Physicians. He was interested in the Boy Scouts and belonged to the Chamber of Commerce. He attended Temple Mt. Sinai.

Dr. Cohen married the former Miss Lois Hollander of Boston on December 30, 1937, in Pawtucket, R. I. She survives, as does a son, Myles J. Cohen, a student at Princeton University; his parents, Mr. and Mrs. Morris A. Cohen of Boston; a sister, Mrs. Elliott Goldfarb of Boston; three brothers, Alfred Cohen of New York, George Cohen of Gloucester, Mass., and Richard Cohen of Austin.

DR. L. B. JACKSON

Dr. Luke B. Jackson, active in Texas Medical Association work for the past 50 years, died in a San Antonio hospital June 3, 1959, as a result of pulmonary arteritis.

The 74 year old physician was a native of Grandview. He was graduated in 1908 from the University of Texas Medical Branch in Galveston and served internships at John Sealy Hospital in Galveston and at the San Antonio State Hospital. Beginning his medical practice in San Antonio in 1909, he continued his work there until his death. He had served as chief of staff of the old Baptist Hospital in San Antonio.



DR. L. B. JACKSON

A past president of the Bexar County Medical Society, Dr. Jackson held continuous membership in the Texas Medical Association since 1909, serving as chairman for the Association's Section on General Practice in 1948 and as chairman of the Council on Medical Defense from 1947 until 1950. Dr. Jackson was the first president of the Bexar County Chapter of the American Academy of General Practice. Active in various phases of church work, Dr. Jackson was a member of the First Baptist Church and served on its board of deacons.

Dr. Jackson and the former Miss L. Rose Walford were married in August, 1909. Mrs. Jackson; one son, Dr. L. Walford Jackson, a San Antonio physician; and two daughters, Mrs. Edith Bagwell of Kilgore and Miss Helena Jackson of San Antonio, survive.

DR. M. M. LANDRUM

Dr. Marvin M. Landrum of Lampasas, a former president of the Lampasas County Medical Society, died June 3, 1959, of cancer of the sigmoid.

Dr. Landrum was born August 14, 1884, at Corn Hill in Williamson County. His parents were Horace W. and Caroline (Tegge) Landrum. Receiving his preliminary education at Bertram, Dr. Landrum received both bachelor of science and doctor of medicine degrees from St. Louis University, the latter in 1907. Following his graduation he served an internship in a St. Louis hospital. He practiced medicine 8 years at Dimmit and Cost before going to Lampasas in 1916; he continued his practice there until his death. Dr. Landrum served as a first lieutenant with the Army Medical Corps during World War I.

A member of the Texas Medical Association since 1917, Dr. Landrum was elected to honorary membership in this organization in 1958. He also belonged to the American Medical Association and the Lampasas-Burnet-Llano Counties Medical Society. He was a Methodist and a Mason. His hobby was fishing.

Dr. Landrum's first wife died in November, 1952. His second wife, the former Mrs. Laura B. McElroy, whom he married in May, 1955, died in late 1958. Members of the family who survive are his mother, Mrs. H. L. Edens of Bertram; a half brother, Dr. Lee E. Edens, Austin dermatologist; and two sons, Marvin M. Landrum, Jr., of Port Isabel and Lester C. Landrum of Austin. A brother, Mood C. Landrum of Kirvin, died about a month after Dr. Landrum.

DR. P. M. KUYKENDALL

Dr. Pere Moran Kuykendall, Ranger, died May 28, 1959, as a result of coronary occlusion and a cerebral hemorrhage.

Dr. Kuykendall was born August 16, 1892, at Moody, the son of Pere Moran and Ella (Naylor) Kuykendall. His early education was received at Texas Agricultural and Mechanical College and at Vanderbilt University. He received his degree in medicine from the Baylor University College of Medicine at Dallas. He followed an internship at Parkland Hospital in Dallas with a residency at Fort Oglethorpe Hospital in Chattanooga, Tenn. Later he did postgraduate work at Washington University in St. Louis, Johns Hopkins University in Baltimore, and Tulane University in New Orleans. A veteran of World War I, Dr. Kuykendall was discharged from the Army in 1919 with the rank of major. Following his military service, he went to Desdemona, where he practiced until 1930 when he moved to Ranger. He continued his practice in Ranger until his death.

DR. P. M. KUYKENDALL

Active through the years in civic, church, and medical affairs, Dr. Kuykendall had been a member of the Texas Medical Association since 1924 and served in its House of Delegates. He was a past president of the Eastland-Callahan Counties Medical Society and District 13 Medical Society. A member of the American Medical Association, Dr. Kuykendall also held membership in the Southern Medical Association. Dr. Kuykendall was a past president of the Ranger Chamber of Commerce, the Rotary Club, and the Eastland County School Board. In addition, he belonged to Alpha Mu Pi Omega, Delta Tau Delta, the Elks Club, the Fort Worth Club, and the Lone Cedar Country Club. He served on the Eastland County Draft Board for the duration of World War II. He was a charter member of the Eastland County Water Board, a past master of Ranger Masonic Lodge No. 738, and a member of the board of trustees and board of stewards of the First Methodist Church. Dr. Kuykendall was an enthusiastic rancher.

Dr. Kuykendall and the former Miss Alla Ray Elliott of Muskogee, Okla., were married in December, 1914. She; one daughter, Mrs. James Preston Morris of Ranger; and one sister, Mrs. Fred Acree of Austin, survive.

DR. E. P. McKINNEY

Dr. Edgar Prentice McKinney, Nacogdoches, died May 6, 1959.

A native of Nacogdoches, Dr. McKinney was born February 8, 1908, the son of John Richard and Laura (Wade) McKinney. He attended Nacogdoches public schools and Stephen F. Austin Teachers College before going in 1925 to the University of Texas at Austin. From there he transferred to the University of Virginia at Charlottesville and was graduated from its Department of Medicine in 1933. He served an internship at Cincinnati General Hospital in Cincinnati, later serving residencies in surgical pathology at the University of Virginia Hospital and in pathology at the Charleston General Hospital in Charleston, W. Va. During his student days he was president of the Whitehead Student Medical Society at the University of Virginia. Prior to establishing his practice in Nacogdoches, Dr. McKinney was assisting surgeon for the Weirton Steel Company at Weirton, W. Va. In 1935 he returned to Nacogdoches, remaining there until his death. Dr. McKinney was on the visiting staff of the Nacogdoches Memorial Hospital. He specialized in clinical diagnosis. On May 21, 1959, the Texas House of Representatives passed a resolution in Dr. McKinney's memory.

During World War II, Dr. McKinney was a major in the Army Air Force, serving as flight surgeon from May, 1942, to December, 1945. A graduate of the School of Aviation Medicine at Randolph Air Force Base in San Antonio, Dr. McKinney served in North Africa, Italy, Sardonia, and Corsica.

A member of the Texas Medical Association since 1936, Dr. McKinney held his membership through the Nacogdoches County Medical Society. He also belonged to District 10 Medical Society, the American Medical Association, the Southern Medical Association, New York Academy of Science, and South Texas Postgraduate Medical Assembly. Dr. McKinney was a member of Phi Gamma Delta fraternity, Nu Sigma Nu fraternity, the Christ Episcopal Church, and the Brotherhood of St. Andrews. Dr. McKinney included Greek and Latin in his daily reading as well as modern foreign languages.

Members of the family who survive include his wife, the former Miss Katherine Louise Monger, whom he married in October, 1930; his mother, Mrs. J. R. McKinney of Houston; and four daughters, Mrs. J. A. Gallo of San Antonio, Mrs. O. R. Whiddon of Fort Sill, Okla., Mrs. J. T. Utley of Tiller, Ore., and Miss Susan McKinney of Nacogdoches. Also surviving are one sister, Dr. Mary Ann McKinney, Houston obstetrician and gynecologist; two brothers, R. W. McKinney and Jack McKinney, both of Nacogdoches; and four grandchildren.

DR. ARTHUR C. SHADDIX

Dr. Arthur Cornelius Shaddix, Beaumont, died May 20, 1959, of a heart attack.

The son of Jeff and Ellen (Grau) Shaddix, Dr. Shaddix was born February 16, 1884, at Marietta. He attended Marietta public schools and was graduated from East Texas State Teachers College at Commerce. In 1913 he was graduated from the Chicago College of Medicine and Surgery, interning at Cook County Hospital and Frances Willard Hospital, both in Chicago, following graduation. He had practiced at Naples, Broken Bow, and Wright City, Okla.; Avinger; and Bivins before going to Beaumont in 1944. He practiced there until his death.

A one time member of the National Board of Surgeons, Dr. Shaddix belonged to the Texas Medical Association through the Jefferson County Medical Society. He had been a member of the Cass-Marion Counties Medical Society. Dr. Shaddix was a Mason; he belonged to the Eastern Star and the Baptist Church.

DR. ARTHUR C. SHADDIX

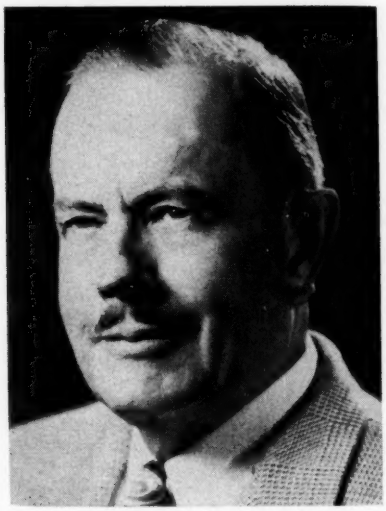
Dr. Shaddix and the former Mrs. Nora Lee Harkey Waldon were married in May, 1932. She survives as do two sons, Dr. C. F. Walden of Groves and John Arthur Shaddix of New Boston, and a daughter, Mrs. Marie Bonomo of Shreveport. Other members of the family who survive include two sisters, Mrs. Eugene Hall of Daingerfield, and Mrs. Alice Thigpen of Tyler; four brothers, Dr. Walter Shaddix of Lubbock, Ed H. Shaddix of Marietta, Tom Shaddix of Texarkana; and George Shaddix of Tulsa, Okla.; and three grandchildren, Sandra Ann Waldon of Groves and James Hale and John Arthur Shaddix II of New Boston.

DR. JESSE C. McKEAN, JR.

Dr. Jesse Cortena McKean, Jr., retired Gladewater physician, died of a heart attack Wednesday, June 24, 1959.

A native of Lometa, Dr. McKean was born October 21, 1891, the son of Jesse Cortena and Emma Corene (Rogers) McKean. He attended West Texas Normal School at Canyon and Texas Christian University at Fort Worth. He was graduated cum laude from the Medical Department of Texas Christian University (now Baylor University College of Medicine) in 1917 and following his graduation, interned at St. Joseph Hospital in Fort Worth, after which he served a surgical residency for 4 years at the William Beaumont General Hospital in El Paso. He later did postgraduate work at Tulane University in New Orleans.

During his nearly 40 years of medical practice, Dr. McKean traveled widely through four different continents. He served 5 years in the Army Medical Corps, 2 years of which he spent in France. Following his discharge from the Army, he served with the American Red Cross and the Rockefeller Foundation in Greece, Turkey, and Russia. He was on a typhus fever commission in Greece for the American Red Cross sponsored by the Rockefeller Foundation and for his work there he was made a knight of the Order of St. George by King George V of Greece, the highest award extended a noncitizen civilian. After completing his Red Cross work, Dr. McKean was appointed chief surgeon for the Sinclair Exploration to Portuguese West Africa, later going to Liberia, West Africa, as medical director for the Firestone Plantation Company.



DR. JESSE C. McKEAN, JR.

Returning to the United States in 1926, Dr. McKean entered private practice in Corsicana and stayed there until 1928, when he moved to Pampa. After practicing in Pampa for 3 years, he moved to Gladewater in 1931. In 1932 Dr. McKean's hands were overexposed in fluoroscopic work and he suffered third degree burns. He was not able to practice for a year and after resuming his work, he limited his practice largely to surgery. As a sequel to the burn on one hand, he lost the middle finger in 1948 and the little finger 6 years later. During the 5 years preceding his death, he had been forced to limit his practice to consultation and diagnosis.

A member of the Texas Medical Association since 1924, Dr. McKean through the years held his membership in the Association through the Navarro County Medical Society, the Gray-Wheeler Counties Medical Society, and the Gregg County Medical Society. He also held membership in the American Medical Association and belonged to the Kiwanis Club and the Gladewater Country Club. Outside office hours, Dr. McKean enjoyed hunting and fishing. He was one of the early physicians to pilot his own plane in his professional work.

Dr. McKean and the former Miss Amy Smallwood were married in Oklahoma City in April, 1935. Mrs. McKean; a daughter, Mrs. Suzanne Hall of Irving; a sister, Miss Pauline McKean of Fort Worth; a brother, W. M. McKean of Los Angeles; a niece; and five nephews survive.

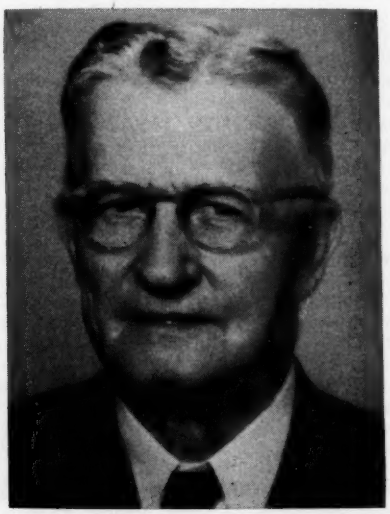
DR. E. F. HEARD

Dr. E. F. Heard, Goree physician for the past 56 years, died May 12, 1959, in Dallas. His death was due to a complication which occurred following kidney surgery.

A native of Marietta, Ga., Dr. Heard was born April 21, 1878. He attended Reinhart Normal College and Georgia Medical College at Atlanta, receiving his degree in medicine from the latter school in 1902. Shortly after he was graduated, Dr. Heard came to Texas and established his practice at Goree. He continued his practice until about 6 months prior to his death. In July, 1953, Dr. Heard, and another Goree physician, Dr. W. M. Taylor, were honored jointly at a Goree community celebration. Their portraits were unveiled at the community building, and each physician was paid tribute for his long years of service.

Through the years Dr. Heard held his membership in the Texas Medical Association through the Baylor-Knox-Haskell Counties Medical Society. He also belonged to the First Methodist Church in Goree.

In 1904 Dr. Heard and the former Miss Sidney Parks were married. She survives as do a son, Charles Heard of Abilene; two daughters, Mrs. Temple Dickson of Sweetwater and Mrs. W. S. Richter of Dallas; and five grandchildren.



DR. E. F. HEARD